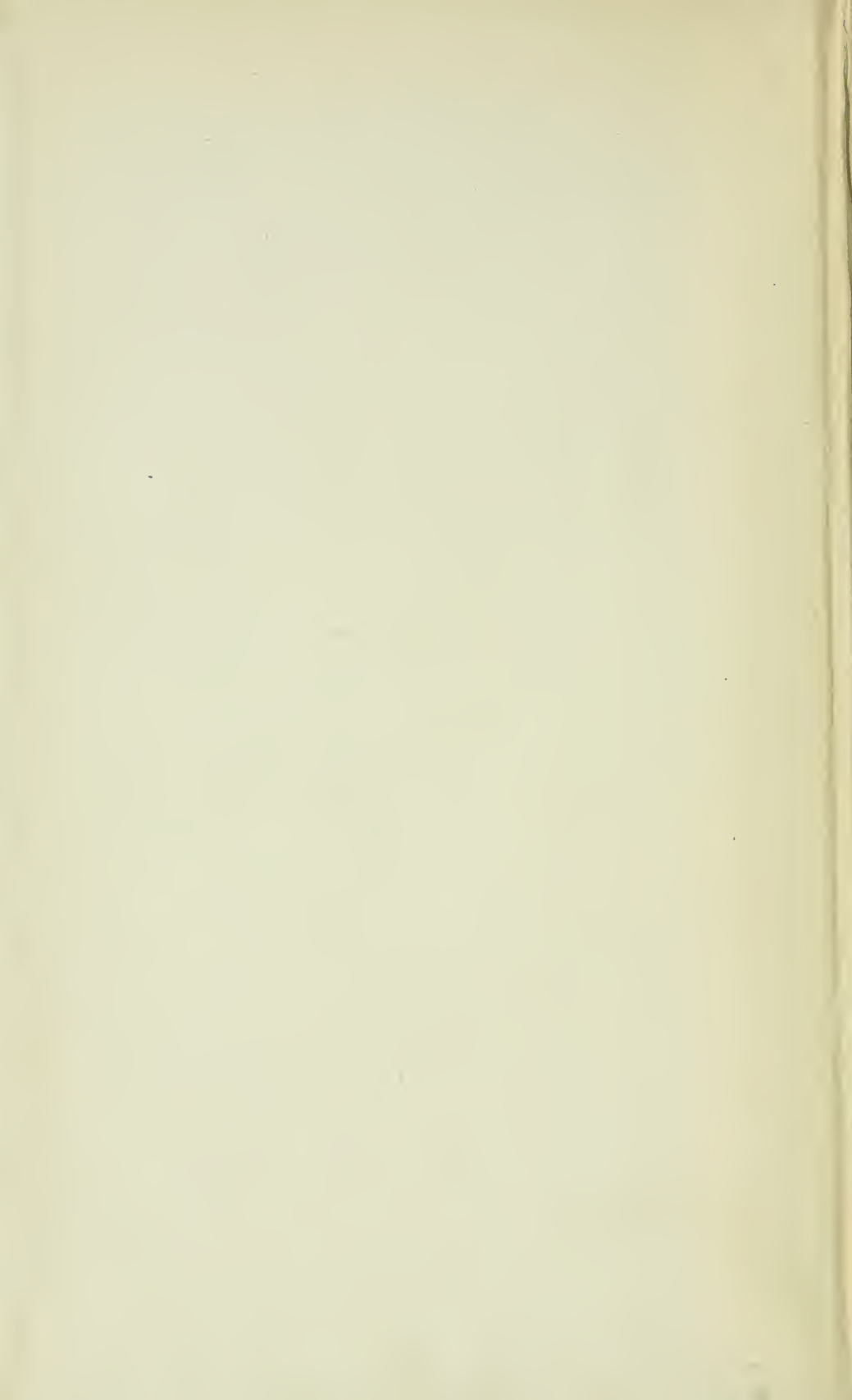






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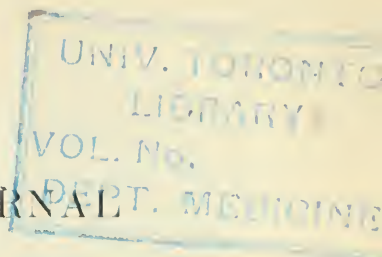
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THE BRITISH JOURNAL OF DERMATOLOGY AND SYPHILIS

JANUARY, 1921.

ALOPECIA AREATA.

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WITH A NOTE ON THE ESTIMATION OF THE PATHOGENICITY
OF THE TONSIL.

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INTRODUCTION.

THIS communication is based almost entirely on cases of Alopecia areata seen in the Out-Patient Department of Guy's Hospital over a period of some eighteen months, but a few of the cases referred to were private ones.

It is not proposed to review in detail the various theories that have been suggested concerning the cause of the disease. They are summarised in recent articles by Freshwater (1) and by Brocq (2), and Sabouraud's (3) recent investigations into the ætiology are familiar to all dermatologists.

The theory that some *external* parasitic infection of the hair-follicles is responsible is, we think, untenable, in spite of the evidence that has been adduced in its support; Jacquet's (4) attempts to inoculate the disease were entirely without result, and the histopathology is not in favour of an external infection of the skin.

The neuropathic theory may be, in part, a true one. Joseph (5) produced bald areas in cats by the excision of the second cervical ganglion, and cases have been described in which the affected parts corresponded to the distribution of a nerve, *e.g.* the first division of the fifth. Sutton (6) who quotes an example of the disease following a supraorbital zoster, suggests that it may be analogous to Herpes zoster and to anterior poliomyelitis. Jacquet's theory, which attributes Alopecia areata to reflex irritation of peripheral nerves, *e.g.* by carious teeth or by certain visceral disorders, is, we think, but a half-truth, and can be explained on other lines. The same may be said of Sabouraud's view that the disease is associated with disorders of the ductless glands, particularly of the thyroid.

In our opinion Alopecia areata is due usually, if not invariably, to focal infection, the foci being the teeth and gums, the tonsils, nasopharynx or nasal sinuses in the great majority of cases. We have collected a good deal of evidence to show that the *Streptococcus pyogenes longus* is the usual infecting organism, but it is quite possible that others may sometimes be responsible. Whether the loss of hair is due to the direct action of bacterial toxin on the hair-papillæ, or to a toxic neuritis, or to ganglionic infection as in Herpes zoster is uncertain, and immaterial from the point of view of treatment.

ÆTIOLOGY.

Alopecia areata is a common disorder, particularly among children and young adults. Norman Walker found out that out of 4000 cases of skin-disease Alopecia areata occurred in 5 per cent. In America it appears to be less common than in the British Isles. I was able to collect some 60 cases from my clinic at Guy's in the course of about six months, and on an average about four new cases of the disease present themselves for treatment at Guy's every week.

Sex.—Sabouraud found it to be twice as common in males as in females; in my own series of 60 cases the proportion was 62 per cent. males and 38 per cent. females.

Age.—As regards *age*, I believe that among hospital out-patients the proportion of children to adults is probably higher than in private practice; this may be because children of the well-to-do classes are likely to have early and more efficient treatment for infected tonsils

and adenoids than are the children of the poor, and because unsuitable feeding, particularly a disproportion of carbohydrate in the dietary, and overcrowding in insanitary dwellings increase the liability to catarrhal infection.

The following is a summary of my cases (hospital practice) :

Between the ages of 1 and 10 years inclusive 27·29 per cent.
(youngest 4 years).

Between the ages of 11 and 20 years inclusive 29·54 per cent.

Between the ages of 21 and 30 years inclusive 29·54 per cent.

Between the ages of 31 and 40 years inclusive 11·36 per cent.

Over the age of 40, 2·27 per cent.

Among my private cases the proportion of adults is much higher.

Heredity.—Sabouraud states that out of 500 cases investigated by him there was a family history of the disease in 20 per cent. To rely on the statements of the patients or the parents is obviously unwise, since conditions other than Alopecia areata (*e.g.* ringworm) may be considered by them to be the same disease. I have, however, met with two remarkable examples, in which a mother and child were both affected :

EXAMPLE 1.—*Mother* : Alopecia began at the age of five years, and for the past five years the scalp has been completely bald. She has a brother, aged 19 years, in whom the disease began a few years ago, and who has now extensive baldness (he was unable to attend for examination). She has severe oral sepsis, and her tonsils are large and very septic. The teeth have been attended to, but pregnancy has prevented further treatment up to the present.

Son, aged 11 years : The disease began as a bald patch two years previous to first attendance at hospital (November 7th, 1919); other patches had appeared recently. *Teeth* good. *Tonsils* very septic. *Enucleation* of tonsils November 24th, 1910. Cultivation gave pure growth of *Streptococcus pyogenes longus*. Vaccine prepared, and given from January 6th to October 19th, 1920. Hair growing freely April 20th, and the scalp has been normal for some months.

EXAMPLE 2.—*Mother, aged 39 years* : Bald patches appeared on the scalp at age of ten years, and since then fresh patches have occurred from time to time, but on several re-growth of hair has taken place. She lost her eyebrows eleven years ago. When first seen there was ophiasis, and the eyebrows were completely absent. Several scattered bald patches on the scalp, and a recent one on the vertex. *Teeth* : Severe pyorrhœa. *Tonsils* : Liquid pus could be expressed from both. To come into the hospital later for treatment.

Daughter : Bald patch appeared on the scalp at age of three years. Since then has had fresh patches with intervals of re-growth. Ophiasis began two years ago and has persisted. *Teeth* good. *Tonsils* very septic. *Enucleation* May 12th, 1920. Hair growing well July 11th. Not seen since.

Focal sepsis.—We think that it is hardly possible to exaggerate the importance of focal sepsis in dermatology as well as in other branches of medicine. Unfortunately a great deal of misconception exists concerning the subject, and many think that the doctrine of focal infection is a temporary “craze.” Most medical men are agreed as to the importance of treating oral sepsis, and the necessity of determining the presence of apical abscesses by X-raying the teeth in doubtful cases is being recognised. But the tonsils, nasopharynx and nasal sinuses are equally potent sources of infection, and are far more likely to be overlooked. Many seem to think that if the tonsils are not enlarged they cannot be infected; this is a very grave error, since in many cases the small, scarred, buried tonsil is infinitely more dangerous than the large succulent one. We have known of patients whose tonsils have been passed as normal even by throat specialists, and yet careful examination has shown the presence of pent-up pus in considerable quantity.

When the importance of oral sepsis as a cause of diseases such as rheumatoid arthritis, gastro-intestinal disorders, certain blood diseases, etc., was realised, many brilliant results followed extraction of the teeth, but unfortunately sound teeth were often needlessly extracted, and disappointment inevitably followed. In many such cases the focus of infection was doubtless the tonsils, the removal of which and the institution of antogenous vaccine treatment would probably have cured the patient. Mollison (7) has recently shown the great importance of tonsillar sepsis in rheumatoid arthritis.

In dermatology the influence of oral sepsis in the pathogenesis of various dermatoses is now generally recognised, and Darier, in his incomparable *Précis de Dermatologie*, says: “Je suis convaincu, pour l’avoir constaté maintes fois, que la remise en bon état des dents, le port d’un dentier bien adapté, l’entretien soigneux de la bouche, peuvent contribuer puissamment à enrayer des poussées éruptives, à améliorer l’état général de beaucoup de sujets, et à permettre la guérison de dermatoses qui avaient résisté à des applications topiques même correctes, et à la prescription d’un régime alimentaire draconien”—but of no less importance is tonsillar and nasopharyngeal sepsis.

Not only does infection of the mouth, tonsils and nasopharynx lead to the direct absorption of toxin and often probably of virulent

micro-organisms into the blood-stream, but the constant swallowing of pus causes gastritis and secondary infection of the intestinal tract, whereby a further focus of absorption is created, proper digestion is interfered with, and fermentation of foodstuffs by bacteria set up. Often when the treatment of oral and tonsillar infection has failed to produce the results expected, the cause of failure is, perhaps, due to the fact that the intestines have become a source of infection. Needless to say intestinal stasis, if it exists, will aggravate the condition and lead to increased absorption of toxin.

Jacquet's theory of the association of Alopecia areata with carious teeth, etc., has been criticised on the grounds that defective teeth are present in the majority of hospital out-patients. Similar arguments have also been put forward by those who criticise the view that rheumatoid arthritis and certain other diseases are due to focal sepsis. Such arguments are futile, and merely betray an ignorance of the pathology of infection. It may, however, be pertinently asked why it is that different persons manifest different pathological reactions towards what appears to be the same infecting organism. Why is it, for example, that a chronic infection with the *Streptococcus longus* may in one person produce rheumatoid arthritis, in another colitis, in another endocarditis, in another purpura, in another anæmia, and so on?

The view propounded by Danysz (*Origine, évolution, et traitement des Maladies Chroniques non-contagieuses*) is probably correct, namely that many chronic diseases, including several dermatoses, *e.g.* psoriasis, certain eczemas and urticarias, scleroderma, Alopecia areata, etc., are the result of a chronic anaphylactic state due to the absorption directly into the blood-stream of foreign proteins, such as food substances, bacterial proteins and albuminoid bodies produced during the incomplete digestion of proteins.

Experimentally it has been shown that if a number of rabbits be injected daily for a period of several weeks with minute doses of some foreign serum, and are then kept under observation, they will gradually present symptoms of chronic diseases of various kinds: some will develop arthritis, others dermatoses with alopecia, others involvement of the nervous system with paralysis, and so on. The same may be said of horses used for the preparation of curative serums, and Petit and Loiseau (8) have published the results of post-mortem

examinations of such animals. For further details reference should be made to Danysz's book, but enough has been said to indicate that Alopecia areata may be a chronic anaphylactic phenomenon, the antigen being bacterial protein (probably usually of the *Streptococcus pyogenes longus*) absorbed from the teeth, tonsils, nasopharynx, etc., and may be comparable, in fact, to the alopecias produced experimentally in animals by injection of foreign proteins, bacterial or otherwise. The reason for different manifestations appearing in different persons or animals exposed to the same infection is probably that each individual is, from its heredity and its own conditions of life, in a different state of "immunity-anaphylaxis" (Danysz), and therefore reacts in a certain way towards foreign proteins; we know that some people are sensitive, say, to egg-white, and such a sensitiveness may be hereditary, but whereas one will react by getting an attack of asthma, another will develop urticaria or eczema.

In our series of cases of Alopecia areata the disease was associated with *infected tonsils*, with or without adenoids, alone in 62 per cent., with *oral sepsis* alone in 5 per cent., with *oral and tonsillar sepsis* together in 25 per cent., with *chronic otitis media and nasopharyngitis* in 2 per cent., with *chronic nasopharyngeal catarrh* without obvious tonsillar sepsis in 4 per cent., and with severe *ethmoidal suppuration* with polypi in 2 per cent.

The high percentage of pure tonsillar infection is probably somewhat misleading, and is accounted for by the preponderance of children among our cases; in adults oral sepsis undoubtedly plays a more important part.

Bacteriology.—Enucleated tonsils, extracted teeth, or swabs from infected gums were examined in Prof. Eyre's laboratory and cultures made. In most cases a vaccine was prepared. From infected teeth or gums the predominant organism was always a *Streptococcus pyogenes longus*. From the enucleated tonsils, although the same organism was almost invariably obtained, sometimes in pure culture, it was not always the predominant organism present, and in a few cases was not isolated at all; but it was not always possible to examine the tonsils until some considerable time after enucleation, and the *Streptococcus longus* seems apt to die out quickly. Other organisms found were the *Micrococcus catarrhalis*, *Staphylococcus aureus* and *albus*, pneumococcus and the influenza bacillus.

As has already been said the *Streptococcus pyogenes longus* is, we think, the most likely organism to cause Alopecia areata. It would seem to have a particularly virulent effect on the hair—witness the severity of the alopecia that so often follows erysipelas. Moreover the epidemic of influenza that occurred during 1918-19 was associated more than any previous one with subsequent loss of hair, and one of its chief characteristics was the part played by virulent streptococci, often of the hæmolytic type.

Many of our cases of Alopecia areata dated from an attack of influenza, and I have seen several patients with post-influenzal alopecia in whom at first the loss of hair was diffuse, but in whom later typical patches of Alopecia areata developed. Recently we have seen a diffuse and severe case of loss of hair, with no actual patches of Alopecia areata, in a young man who gave no history of previous acute illness, but his tonsils literally “dripped” pus, and he had secondary catarrhal deafness.

ASSOCIATION OF ALOPECIA AREATA WITH OTHER DISEASES.

(1) *Graves's disease*.—Loss of hair is almost constant in this disease, and a certain proportion of cases are associated with severe and sometimes total alopecia. Apart from this, a considerable number of ordinary cases of Alopecia areata exhibit symptoms of hyperthyroidism, flushing, sweating, tremor, tachycardia and fulness of the thyroid gland.

The explanation is not difficult, for in many instances hyperthyroidism and probably true Graves's disease are due to chronic infection, particularly of the tonsils, and may be cured, at any rate in the early stages, by removal of the infecting focus.

Whether excess of thyroid secretion in the blood-stream causes loss of hair *per se*, just as deficiency may do, is uncertain.

(2) *Rheumatoid arthritis*.—A certain number of patients with Alopecia areata have rheumatoid arthritis, though the association is not such a common one as that between the latter disease and Lupus erythematosus—a condition that I believe also to be due to chronic infection with the *Streptococcus pyogenes longus*.

(3) *Herpes zoster*.—Typical Alopecia areata may follow supra-orbital zoster or may coexist with zoster elsewhere. We have seen a case in

which intense right-sided neuralgia of the scalp with extreme tenderness, right-sided facial paralysis, an attack of right supra-orbital herpes and rheumatoid arthritis coexisted in the same patient. The teeth were not infected but the tonsils were extremely septic. It was not considered advisable to enucleate them owing to the patient's age, but they were cleaned up as far as possible and cultures taken from them. A pure growth of *Streptococcus longus* was obtained and a vaccine prepared. The early doses of vaccine were followed by considerable reaction with increase of pain in the affected joints, and with each dose a *slight recurrence of the supra-orbital herpes occurred*—a point of great interest. The patient developed an attack of acute iritis after the initial manipulation of the tonsils, but this soon subsided, and now there is very great improvement in her joints and in her facial muscles on the side of the palsy, and she has completely lost her neuralgia. In this case it is obvious, we think, that the rheumatoid arthritis, the neuritis, the herpes, the facial paralysis and the iritis were all due to infection of the tonsils, the infecting organism being a *Streptococcus longus*.

(4) *Vitiligo*.—The association of Alopecia areata with leuco-melanoderma is too frequent to be merely a coincidence. The aetiology of vitiligo is not clearly understood, although exposure to sunlight or the irritation of lice may provoke the pigmentary change. It is probable that, as Pringle and MacDonagh (9) suggest, the disease is a toxæmia, and there is considerable evidence that the toxin acts on the posterior root ganglia or fibres. It is often apparently associated with syphilis, and may be a premonitory symptom, like Herpes zoster, of syphilitic involvement of the central nervous system. In many cases, however, no evidence of syphilis, either congenital or acquired, can be obtained, in which case the infection may be, as with most cases of Herpes zoster, a bacterial one.

ILLUSTRATIVE CASES.

Alopecia areata is a disease that tends to get well, even if untreated, especially in young persons. Therefore one must be very careful before drawing deductions concerning the value of a certain method of treatment. For this reason, although every case was carefully investigated for focal sepsis, and the appropriate treatment carried

out when possible, no conclusions were drawn from *recent* cases or from cases in which re-growth of hair was already taking place. But patients were met with in whom one or more patches had persisted for a year or longer, and in whom there was no evidence of recovery; in some of these removal of an infecting focus or foci, with subsequent vaccine treatment, has been followed by a comparatively rapid re-growth of hair; in these we think it is fair to assume that the disease was due to the focal infection.

CASE 1.—E. C—, male, aged 12 years, had influenza Christmas, 1918. In March, 1919, hair began to fall, and a bald patch formed on the vertex. Later another patch appeared. When seen at hospital (December, 1919) there was typical Alopecia areata involving about a quarter of the scalp, and the disease was evidently spreading; no evidence of re-growth. *Teeth* fair. *Tonsils* very septic. *Enucleation* January, 1920. Autogenous streptococcal vaccine given. February 24th: No further spread. March 24th: Hair growing freely. Complete recovery since.

CASE 2.—H. M—, female, aged 13 years. Almost complete alopecia of scalp of six years' duration. *Teeth* good. *Tonsils* very septic. Large adenoid vegetations. *Enucleation* October 13th, 1919. December 18th: Hair growing satisfactorily. Recovery.

CASE 3.—J. C—, male, aged 12 years. Alopecia areata of many years' duration. Disease evidently spreading. *Teeth* good. *Tonsils* very septic. *Enucleation* October 13th, 1919. *Cultivation*: *Streptococcus longus*, *Micrococcus catarrhalis*, *Staphylococcus aureus*. Autogenous *Streptococcus longus* vaccine given from October 28th to December 12th, 1919. January 8th, 1920: Hair growing; no further spread. January 22nd: Hair growing fast.

CASE 4.—H. R—, male. Complete alopecia in 1918. Re-growth took place, but hair came out again after an attack of "pleurisy" in July, 1919. First seen October, 1919. Complete alopecia of scalp and right eyebrow; partial alopecia of left eyebrow. *Teeth* good. *Tonsils* septic. *Enucleation* October 6th, 1919. *Cultivation*: *Streptococcus longus*, *Micrococcus catarrhalis*. Vaccine given. February 3rd, 1920: Eyebrows growing freely; some re-growth on scalp. Recovery.

CASE 5.—G. S—, male, aged 8 years. Influenza November, 1918. Alopecia in patches soon followed. First seen December, 1919. Several patches of Alopecia areata. *Teeth*: Pyorrhœa and caries. *Tonsils* septic. Adenoids present. January, 1920: Septic teeth removed. February 17th: Tonsils and adenoids removed. Autogenous streptococcal vaccine given March 30th to October 19th. March 10th: Hair growing. Subsequent recovery.

The following case is of interest in that the patient volunteered the statement, without being questioned, that the vaccine injections produced itching and tingling in the bald patches.

CASE 6.—P. R—, male, aged 34 years. Several acute recent patches of Alopecia areata. *Teeth*: Pyorrhœa. *Tonsils* very septic. Rapid re-growth of hair took place after removal of sepsis and institution of vaccine treatment (*Streptococcus pyogenes*

longus), but as the case was a recent one, no conclusions can be drawn as to the effect of treatment.

CASE 7.—W. S—, private case. This patient was an asthmatic, and had had Alopecia areata of the scalp and beard region for some months previous to first consultation. Mr. Mollison found severe infection of the ethmoidal cells associated with nasal polypi. Operation performed for the ethmoidal infection. Since the operation not only has the asthma greatly improved, but the patient himself called my attention to the fact that his alopecia has ceased to spread, and a rapid re-growth of hair in all the patches on the scalp and face has taken place.

TREATMENT.

It may be said at the outset that, although removal of septic foci and subsequent vaccination has proved successful in restoring the hair even in long-standing cases of Alopecia areata, in some patients still under observation re-growth has either not yet appeared or has been only partial. In a few of these it is probable that complete atrophy of the hair-papillæ has occurred in some of the bald areas, and that re-growth is impossible; in others, perhaps, the intestines form a still further focus of infection. It is possible, too, that in women pelvic infection may give rise to the disease.

If our view of focal sepsis be accepted, it is evident that the most important part of the treatment of Alopecia areata is to remove, as far as possible, every source of infection, since, unless this be done, persistent alopecia or recurrent attacks are likely to occur. With regard to oral sepsis, an attempt may be made to treat pyorrhœa without sacrificing more teeth than is absolutely necessary, but the opinion of a competent dentist must always be taken on this point; the possibility of the existence of apical dental abscesses should be borne in mind, and X-ray pictures of the teeth taken if necessary.

Infected tonsils should, we think, always be removed unless there is some definite contra-indication; but a thorough examination by a throat specialist is essential, and only after careful consideration in doubtful cases should the patient be submitted to what is, after all, a very unpleasant operation.

Some cases of Alopecia areata seem to depend on chronic nasopharyngeal catarrh without evident tonsillar sepsis, and for these the correction of any nasal deformity and the institution of autogenous vaccine therapy is the correct treatment.

If, after careful examination, no definite source of infection can be

found—and I have only seen one such case—reliance must be placed on general tonic treatment and local stimulation of the bald patches.

Vaccine therapy.—It may be asked why, if a septic focus can be thoroughly removed, subsequent vaccine treatment should be necessary? In many cases it is probably not required, particularly if the disease be of recent origin. But, if Danysz be correct in supposing that conditions such as Alopecia areata are manifestations of the “immunity-anaphylactic” state, and depend on the production in the tissues of excess of antibody, then repeated injections of specific antigen are rational treatment, comparable to that of asthma by injection of the proteins of food-substances, animals (*e.g.* cat and horse) and bacteria. In our cases of Alopecia areata ordinary vaccines have been given under Prof. Eyre’s direction, usually at weekly intervals; it might, perhaps, be preferable to give a vaccine prepared according to Danysz’s method (*i.e.* heated to 70° C.) at more frequent intervals.

Internal treatment.—If anæmia be present, iron and arsenic should be given in increasing doses. Arsenic certainly appears to be of use, and if hypochlorhydria exists, the liquor arsenici hydrochloricus may be used in combination with full doses of dilute hydrochloric acid. Sutton (10) gives urotropine, and states that his results have been better since he began to employ this drug. In adults in whom there is evidence of nervous exhaustion, small doses of bromide, a generous diet, and complete rest with change of air should be prescribed.

Local treatment.—All one can hope to do by local treatment of the patches is to improve the blood-supply by applying irritants. The best is, perhaps, pure carbolic acid or pure lysol, which should be painted on, and the application repeated, when the resulting inflammation has subsided, until new growth appears. A stimulating hair-lotion, particularly if pityriasis or seborrhœa of the scalp co-exist with the alopecia, may well be given, *e.g.* Hydrarg. perchlor. gr. iss, Acid. salicylici, Chloral. hydrat. āā gr. x, Ol. lavandulæ mij, Ol. amygdalæ mij-v, Acetoni ʒij, Spirit ad ʒj.

In severe long-standing cases—and the “ophiasis” type is usually the most obstinate—the ultra-violet rays may be employed sometimes with considerable success.

NOTE ON THE ESTIMATION OF PATHOGENICITY OF THE TONSIL
BY MR. ZAMORA.

Since the tonsils formed in a large percentage of the series of cases of Alopecia areata the most important source of infection, a special study was made from the point of view of developing a method of determining the pathogenicity of the tonsil. The growing recognition of the importance of tonsillar infection in many general conditions has led to a search for some standard by which the infectivity of a tonsil may be measured, and in the United States, where the subject is much considered, a special instrument for tonsil transillumination has been devised. It is the object of this paper to establish the fact that although in certain cases the infectivity is patent, it is only by the most careful observation that it can be excluded.

Many of our cases showed all the characteristic signs—fibrous cryptic tonsils, associated with cervical adenitis, containing in their crypts cheesy material and even liquid pus and accompanied by areas of dusky hyperæmia of the fauces and soft palate.

A certain number of cases, however, showed none of these features, and yet were shown to contain infections of definite pathogenic importance.

There are many possible fallacies, and perhaps the most misleading type of tonsil is one which, either from trauma of previous incomplete operations or from intense inflammations many years previously, presents at the time of examination a firm scar covering and burying the tonsil remnants.

It has been established beyond doubt that hypertrophy is by no means a measure of infectivity, many of the most virulent infections being present in very small, shrunken tonsils. In these cases the active tissues of the gland have been replaced by fibrous tissue laid down during repeated attacks of inflammation, and the tonsil is reduced to a fibrous mass, often very adherent to the surrounding tissues, and containing in its substance tortuous crypts which can only act as reservoirs of septic material. In this connection it is interesting to note that at a meeting of the Laryngological Section of the Royal Society of Medicine, November 5th, 1920, the consensus of opinion

was definitely that the size of the tonsil is no guide to its infectivity, and that the most chronic infections, especially tubercle, are found in association with shrunken tonsils.

Projection of the tonsil into the pharynx is not a reliable indication of the amount of hypertrophy, for one frequently sees patients in whom the tonsils at first glance appear flat, and yet on contraction of the pharyngeal constrictors large masses are revealed buried under the fauces and soft palate.

This, of course, is an anatomical accident dependent upon (a) the area of attachment of the tonsil, (b) the development of the plica triangularis.

The patient's history is not always helpful. Some are acutely aware of their throat infections, others resent the suggestion that any blame can be attached to tonsils which have never troubled them, while an important group give a history of repeated attacks of tonsillitis in childhood but are definite that for many years there has been no recurrence.

The presence of enlarged glands in the anterior triangle in adults is important evidence of infection.

Bacteriological findings from swabs taken before removal are of no value, except in a few cases where the tonsils are widely opened and samples of the bacterial contents of the deepest parts can be obtained, for H. Gardiner (11) has proved that the pathogenic infections are to be found in the deepest parts of the crypts.

The amount of visible infection in our cases bore no constant relationship to symptoms produced, and it became evident that, given any degree of infection, the relative immunity of the patient varies abruptly from time to time; the best example of this was a patient who had recurrent urticarial attacks which had no obvious relation to changes in the throat condition, but which were cured by complete enucleation of the tonsils.

Dr. Ryle examined in the post-mortem room the tonsils of many patients dying from any cause, and found the great majority to contain liquid pus in appreciable quantities, this being presumably due to a terminal lowering of resistance.

In order, therefore, to make a decision on the possible effects, it is necessary to examine with these facts in view and to correlate all the available evidence. Often an association with other conditions

generally accepted to originate in focal sepsis, such as rheumatoid arthritis, affords additional evidence.

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FIG. 1.—Hyperkeratosis of left palm.



FIG. 2.—Hyperkeratosis of soles.

TO ILLUSTRATE DR. G. R. HAMILTON'S ARTICLE ON ARSENICAL KERATOSIS AND EPITHELIOMA.

ARSENICAL KERATOSIS AND EPITHELIOMA.*

G. R. HAMILTON, M.B., M.S.(Sydney),

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ALTHOUGH quite a number of cases are on record of arsenical keratosis, a few of them with the development of epitheliomata as well, the latter condition is, however, comparatively rare. I venture to record a case of arsenical keratosis with epithelioma in the same patient, chiefly because of the long period of taking arsenic, the finding of arsenic in certain of the tissues and the microscopic description of the tumour.

Jonathan Hutchinson, F.R.S., on December 6th, 1887, said at a meeting of the Pathological Society of London (1): "In the following statement I have two separate propositions to maintain, one of which is, however, of great importance to the other. The first is that by prolonged internal use of arsenic the nutrition of the skin may be seriously affected, and that, amongst other changes, warty or corn-like indurations may be produced. The second goes much further, and asserts that if the drug be continued these 'arsenic corns' may assume a tendency to grow downward and pass into epithelial cancer." He described a most interesting case with splendid coloured illustrations, and added that even earlier Dr. J. C. White, of Harvard University, in "Psoriasis—Verruca—Epithelioma: a Sequence," recorded a very interesting case which he himself saw later, and also recorded with coloured illustrations.

In the literature I can only trace mention of sixteen cases of arsenical cancer, amongst them being those recorded by Dubreuilh (2), Hartzell (3), Wile (4), Fordyce-MacKee (5), Schamberg (6), and quite recently Wise (7). Most of the cases are without any histological report.

Miss F—, aged 46 years, whose case I am now recording, took arsenic

* The case described was shown at the Dermatological Section of the Royal Society of Medicine on July 15th, 1920.

chiefly in the form of the liquor arsenicalis, for psoriasis for "nine months in each year" for 36 years. Her past history contains no account of serious illness. She has three sisters and one brother, all alive and well, as are also her father and mother; none of them have had psoriasis. When 10 years old a scaly patch developed on her left knee. She was taken to a doctor, Dr. J. M—, who diagnosed psoriasis, and prescribed liquor arsenicalis mij , and an ointment which discoloured her clothing. She saw this doctor nearly every week for 15 years, and always took the same medicine three times daily. When she was 12 years old the "rash" gradually spread to her scalp, thighs and legs, the ointment then making her hair "heliotrope" (probably chrysarobin). When 14 years old she remembers having cramp in her hands so badly that she could not hold a needle. After 15 years, *i.e.* when 25 years old, she went to another doctor, Dr. L—, who prescribed Fowler's solution mij , which she took twice daily for 4 years. Moving to another locality she went to a third doctor, Dr. G. M—, who prescribed Fowler's solution mij , which she took twice daily for 17 years. Ointments were given by these last two doctors, but they did not stain her clothing nor alter the colour of her hair. The above doctors kindly gave me this information about the medicine they prescribed.

For the last 20 years she noticed slight corns on her hands, on the palms and on the dorsum near the joints, and also on the soles of both feet. These gradually became more numerous and larger, and the skin became very hard and thick in the areas affected (Figs. 1 and 2). Twelve years ago the areolæ around her nipples commenced to become discoloured and since then have gradually become darker (Fig. 3). About 10 years ago she went to a skin hospital in London for 6 months, soon after which she noticed a few yellow spots on her abdomen, and for the first time her feet became painful, but the corns never ulcerated. Four years ago she had all but her lower four incisor teeth removed because they were decayed and ached. A little over a year ago she noticed two tiny spots the size of a pin's head on her right arm; these gradually became larger. In January, 1919, she went to a hospital in London for one month and had electrolysis to her arm; this proved to be no good, and she then had CO_2 snow with temporary benefit, but after one month the spots on her arm recurred, coalesced and grew in size.



FIG. 3.—Showing scattered warty nodules—"rain-drop" pigmentation of areolae.



FIG. 4.

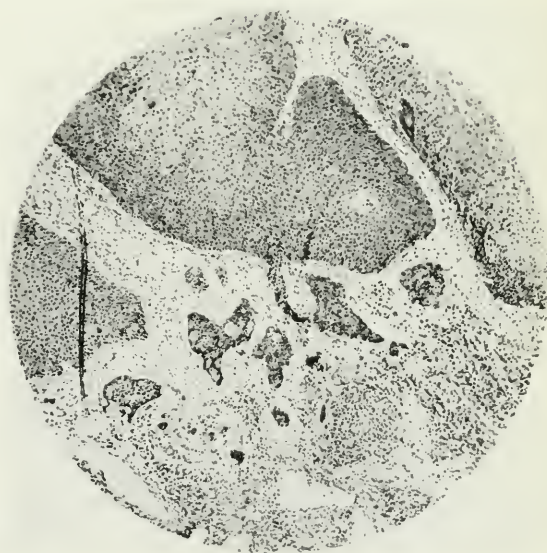


FIG. 5.

FIG. 4.—Growth on right arm. Note also "rain-drop" pigmentation.

FIG. 5.—Inferior extremities of epidermal processes of carcinomatous wart from right arm. Hæmatoxylin and eosin. $\times 45$.

Her psoriasis would at times get better, but always recurred if she left off her medicine. The longest time she was ever without medicine was 2 months. She states she took medicine for "at least 9 months in each year for the whole period."

In March, 1920, she consulted Dr. Malcolm Simpson, who diagnosed the case as one of chronic arsenical poisoning with an area of carcinoma on her right arm. He sent her to the London Hospital to Dr. J. H. Sequeira, where the above history was obtained. The tumour on her right arm measured 1 in. long by $\frac{3}{8}$ in. wide, and stood up $\frac{1}{4}$ in. high (Fig. 4). There was marked hyperkeratosis of both palms and soles, "raindrop" pigmentation on the abdomen and scattered small yellow warts. She was admitted and the growth was excised. On section of this Prof. Turnbull reported as follows:

"The centre of the section is occupied by two closely set, raised, warty masses, composed of long and broad processes of epidermis. The processes extend downwards into the dermis half way to the level of the sweat-glands. In form and arrangement the majority of the epithelial cells in the processes are conspicuously atypical; karyokinetic figures are very numerous. Immediately below the processes are small, isolated groups of atypical epithelial cells (Fig. 5). There is no pigment in the epithelial cells. The summit of the wart is necrosed and is infiltrated with neutrophil leucocytes. A broad zone of the dermis round the inferior extremities of the epithelial processes is occupied by closely packed lymphocytes and plasma-cells. In this zone of infiltration collagenous fibres are scanty and very delicate, whilst elastic fibres are absent.

"In the skin at each extremity of the section the Malpighian layer of the epidermis is about seven cells deep, the stratum granulosum occupying one layer of these cells. The horny layer is split into lamellæ, and is frequently equal in depth to the Malpighian layer. It contains no nucleated cells. In the Malpighian layer prickles are absent, and the borders of the cells are very seldom visible; perinuclear vacuolation is frequent. There is no pigment in the basal cells. In the papillary zone of the dermis there is a considerable number of spindle, triangular and rounded cells which are filled with granules of yellow pigment. This pigment does not give the Prussian blue reaction of iron. There is no inflammatory infiltration of the dermis.

“*Diagnosis.*—In the skin of the arm is a squamous and horny carcinoma of the form of a malignant papilloma.

“In the remainder of the skin of the arm there is a loss of differentiation between the cells of the Malpighian layer, a conspicuous perinuclear vacuolation of the cells in this layer, and a slight infiltration of the papillary zone of the dermis with cells containing melanin.”

While the patient was in the ward I obtained the following facts, which have a special bearing on her condition: She never had psoriasis, she is sure, on her arm where the growth occurred. Her eyes at times used to become watery but she never had any profuse discharge from them or from her nose. She has lost her sense of smell and cannot see as well as she could. Dr. H. Neame kindly examined her optic discs for me and reported them quite normal. The pigmentation does not correspond to her psoriasis except for a patch on her left leg. A few months ago she had herpes on her forehead and on her back. Her face has never become muddy but otherwise her skin has generally become darker, more so on her shoulders and back of neck. The skin felt rough but not shotty. She had at times noticed a faint scaling of her skin, which has become more prominent lately. She had two white patches on the mucous membrane at the angles of her mouth. Her gums have never bled, nor has she noticed any ash-coloured elevations on her lips. There has been no abnormal sweating. She has not had any flushing or hyperæmia of the skin. She has never had nausea, vomiting or diarrhœa, nor has she had any excessive salivation. Once or twice, about 12 months ago, her eyelids became puffy in the mornings. On and off for the last 6 years she has had numbness and tingling in the fingers but she has had no general neuritis. Her arms and legs have generally become thinner, she showed no incoordination in ordinary movements, her reflexes are all present, and apart from the thinness nothing suggested any muscular atrophy. She has good power in both hands but her fingers are generally stiff, especially the little fingers, which she cannot bend out straight. There is no paralysis as seen in lead palsy; her gait is altered on account of the hyperkeratosis but is not of the steppage type. There is no adenitis. Her Wassermann reaction is negative. No albuminuria.

Her blood was carefully examined by Dr. Panton to see if there

were any myeloblastic change but the only change was a slight leucocytosis.

I scraped some skin off, obtained a specimen of her urine, some of her hair and collected as much of her nails as possible, and in each of these Dr. Marrack found traces of arsenic by Marsh's test.

I am indebted to my chief, Dr. J. H. Sequeira, for the opportunity of putting this case on record.

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THREE CASES OF ICHTHYOSIS FOLLICULARIS.

MALCOLM MANSON, M.C., M.A., M.D.

THE following cases seem to be worth recording for two reasons: Firstly, the condition is not a common one; and secondly, its limited distribution in all three cases is unusual. The cases are two boys, aged 16 and 8 years respectively, and one girl, aged 6 years, the third, sixth and seventh children of a family of eight belonging to the working-classes. In all three cases the condition has been present since infancy. The father died at forty years as the result of an accident. The mother is alive and well and the family generally is strong and healthy, no other member beyond these three showing any skin affection.

CASE I.—Harold R—, aged 16 years. According to the mother this boy at birth was quite bald, and the skin of the head appeared to be quite healthy. A few months later hair began to appear very slowly and sparsely on the head, and the scalp became pink in colour and rough in appearance. Ever since the hair has been very thin, and the scalp in places has been pink in colour and rough to the touch. At present the hair is very sparse all over the scalp, so that patient shows a considerable degree of baldness. This is especially marked over the nape of the neck to the level of the external occipital protuberance and over both temples. In these regions the skin has a faint pink colour and is rough to the touch, the roughness being due to the projection of the hair-follicles, which stand out as small, white pin-head elevations on a pink background, each individual follicle being tipped by a small white scale. Practically every follicle seems to be involved, and the vast majority of them have shed their hairs. Behind, the area affected extends down the neck to the level of the collar. At the sides the areas affected extend down in front of the ears to the level of the external auditory meatus. Over the rest of the scalp the skin is smooth and polished, and innumerable minute scars can be seen, resulting apparently from atrophy of



CASE 1.



CASE 3.

CASE 1.

CASE 2.

TO ILLUSTRATE DR. MALCOLM MANSON'S THREE CASES OF ICHTHYOSIS FOLLICULARIS.

follicles previously affected. These, with the generalised thinness of the hair on the scalp, seem to indicate that the disease has been very widely disseminated, although no actual bald patches have been left behind. The eyebrows show only a few very small, barely perceptible hairs projecting from a smooth polished skin. The eyelashes are short and stubbly, and a mild blepharitis is present. There is no appearance of hair on the cheeks and no sign of hair in the axillæ, but the pubic hair is quite healthy. The skin of the body, face and limbs is perhaps a little dry, but there is no sign of ichthyosis or folliculitis, and there is no impairment of sweating.

CASE 2.—John R—, aged 8 years. This child is also said to have been born bald, the scalp becoming affected a few months later, exactly as in Case 1, when hair began to appear sparsely on the head. The condition has been present ever since and is still active. The hair is very thin all over the scalp, and is dry and stiff, suggesting the appearance of pig's bristles. On the nape of the neck and over both temples the skin is pink in colour and rough to the touch, the follicles presenting exactly the same appearance as in Case 1. Over the rest of the scalp the skin is paler in colour, and is rough and covered over with small scales. No follicular scars are to be seen. The eyebrows present the same appearance as in Case 1. The eyelashes are healthy. The skin of the face, trunk and limbs is quite healthy, and shows no signs of ichthyosis or folliculitis.

CASE 3.—Mary R—, aged 6 years. Like her two brothers, this child is said to have been born bald, and the skin-affection of the head appeared a few months later, when hair began to appear on the scalp. The condition to-day is almost identical with that of Case 2, except that, in addition to the disease being active over the nape of the neck and over both temporal regions, it is active also over the frontal region. Over the rest of the scalp the hair is thin and the skin pale and scaly, but no actual bald patches are seen. The eyebrows present the same appearance as in Cases 1 and 2. The eyelashes are healthy. The skin of the face, trunk and limbs is healthy.

Cases 2 and 3 have been under observation for ten months, and during that time very little change has taken place. The mother, however, maintains that in all three cases the hair is becoming very gradually thinner. Hairs can be extracted very easily from affected

follicles in all three cases. In none of the cases have any subjective symptoms been complained of.

Etiology.—There is nothing in the family history to suggest syphilis as a possible aetiological factor, and two of the three children have been quite free from serious disease of any kind. The eldest of the three had tubercular hip-joint disease some years ago, but is now quite well, except for the resulting deformity. In all three cases the condition has been present from shortly after birth, and the mother volunteered the information that during each of the three pregnancies from which these children resulted she had severe eczema of the vulva, and was under treatment in each case for several months. During her other five pregnancies she had no eczema, and the five remaining children have healthy scalps.

There does not seem to be any evidence in these cases that the disease is very contagious. No care was ever taken by the mother to have special towels, brushes or combs for the three affected children, the towels, brushes and combs used by them being common to the household, and there has been no spread of the disease to any other member of the family.

Diagnosis.—The cases seem to fall under the same category as three cases reported by MacLeod (1) in 1909 under the name "Ichthyosis Follicularis Associated with Baldness." The cases described above, however, do not show the same degree of hyperkeratosis of the follicles, and the affection is limited to the head, while in MacLeod's cases the disease was widely disseminated, and was accompanied by a generalised mild ichthyosis. The scarring of the scalp in Case 1 suggests a close connection with the "Ulerythema ophryogenes" of Taenzer (2). From the "Keratosis pilaris" of Brocq (3) these cases differ in the localisation of the disease, the scalp never being affected in his cases. It is of interest to note that my three cases occurred in one family. MacLeod's cases were all three in one family, and the tendency to run in families was noted by Taenzer in "Ulerythema ophryogenes" and by Brocq in "Keratosis pilaris."

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ROYAL SOCIETY OF MEDICINE.

DERMATOLOGICAL SECTION.

MEETING held on July 15th, 1920, Dr. ARTHUR WHITFIELD, President of the Section, in the Chair.

Dr. J. H. SEQUEIRA and Dr. W. H. WILLCOX showed a *case for diagnosis*. Dr. J. H. Sequeira said that the patient was an army officer, aged 37 years, who, while on active service in Mesopotamia, contracted what was believed to be the "Baghdad sore." The condition appeared in November, 1918, and would not heal—remaining, in fact, an open sore for six months. Ultimately the sore was treated by operation and by antimony ointment, and under this treatment it finally healed up. He first saw the patient in February, 1920, when he had a number of discrete papules in the skin extending above and behind a very definite scar on the left malar eminence. They were of a reddish brown colour. The scar certainly resembled the scars he had seen in other cases of Baghdad sore, but he was not familiar with the grouping of these nodules, and therefore he asked Dr. Castellani to see him. Dr. Castellani thought it possible that the skin around the primary sore had been infected, and suggested that it would be a wise course to give intravenous injections of antimony. In spite of this treatment, however, the lesions had increased in number, and the trouble was now more widely spread than when he saw the patient first. He had had also the benefit of consultation with Dr. Willcox, by whose advice antimony was stopped and simple soothing treatment applied. The lesions, since he first saw the patient, had increased in number, and the area involved had distinctly extended in a forward direction.

Dr. W. H. WILLCOX said that the patient was in Mesopotamia for a considerable time. Just before he left that country he was living in a mess where there were three other cases of Baghdad sore in a similar position. He saw two of the cases himself, and they were confirmed by bacteriological examination. There was no question as to the nature of the sores. The lesion on the left cheek did not develop while the patient was in Mesopotamia, but started while he was in India on his way home. He was seen by several medical officers, and the diagnosis was made, but apparently there was no bacteriological examination. The treatment adopted

was that usually given for Baghdad sore and the lesion got completely well. Treatment was commenced in November, 1918, and the sore was completely healed by April, 1919. The condition remained alright until January of this year, when the edge of the scar began to thicken and the papules developed. His own view of the case was that the original sore, judging from the history and from the conditions under which the patient was living, and the very great prevalence of these lesions at that time, was an Oriental sore, but when he saw the lesion which developed later he formed the opinion that something quite different was being now met with. The subsequent lesion did not respond to treatment as Oriental sores did. He did not recollect a single case where there was a recurrence due to a proved Oriental sore lesion around an old sore which had healed for some months. It was well known that the Baghdad sore conferred immunity, and the Arabs inoculated their children with Baghdad sore to prevent them from having disfiguring sores on the face. The heart and lungs of the patient were thoroughly sound, and there was no family history of tubercle so far as could be discovered.

Dr. GRAHAM LITTLE said the patient was sent to him by his colleague, Dr. Willcox, in May last, when he showed much the same condition as now present. He gave his opinion then that the new efflorescence was a granulomatous infiltration almost certainly lupoid, and he was still convinced that this was the true nature of the disease now present, whatever might have been the original growth which was excised, concerning which they had no very authentic evidence.

Sir JAMES GALLOWAY said that the lesion seemed infiltrated and granulomatous in nature. If he were pressed to give an opinion, it would be that tuberculosis had been established by some means or other in the skin. It would be helpful if a piece of the skin were taken and examined by histological methods.

Dr. G. PERNET said the case appeared to be one of *Lupus vulgaris*. The affected area responded distinctly to the glass-pressure test; and the treatment he had had for the Baghdad sore, including curetting, might have modified the area before the lupus developed.

Dr. GRAY agreed with Dr. Little that this was a case of *Lupus vulgaris*. He did not think the glass-pressure test was absolute in such cases. A case he brought before the Section some time ago, while almost certainly not tuberculous, gave the glass-pressure test to perfection.

The PRESIDENT said that at first he thought that it was undoubtedly a case of lupus, but on closer inspection he was not sure that it was tubercle of any kind. It was a granulomatous condition, and he thought it was a curious case of lymphatic tracking of the original Baghdad boil. It would be extremely difficult

to decide the diagnosis even if a portion of the skin were taken. He had had sections of Baghdad boil stained histologically which did not show the parasite, and they looked like lupus. He suggested that two nodules be taken out, one inoculated into a guinea-pig, and the other cut into sections. He would be surprised if it turned out to be lupus.

Dr. WILLCOX said he took some scrapings from one of the papules, and these were examined microscopically by Captain S. R. Douglas. The result was quite negative as regards any *Leishmania* infection.

Dr. ADAMSON said he would have no hesitation in making the diagnosis of Lupus vulgaris in this case at the present stage. He would suggest that a part of the lesion be scraped with a sharp spoon. If it was a case of Lupus vulgaris, the lupus nodules would be found to be easily scraped away, which was not in his experience the case in "Delhi boil."

Dr. E. G. GRAHAM LITTLE showed a case of *Pemphigus vegetans*. The patient was a clergyman of the Welsh Church, living in Wales all his life. He began to notice blisters in his mouth more than a twelvemonth ago, and the eruption seemed to have been confined to that region for nearly a year, the whole mucosa of the cheeks and lips being finally affected, so that scabs covering a fœtid discharge occupied the whole of the red surface of the lips. When he first saw him, in April, he had besides this condition of the mouth several thin-walled vesicles on the nape of the neck and on the forehead. He admitted him into St. Mary's Hospital, where the condition rapidly developed, the vesicles being quickly transformed into ulcers, and numerous fresh lesions coming from time to time. He also began to show the presence of vegetations emitting a most offensive smell in the groin, and a pustular discharge from the urethra which gave a negative result as regards gonococci. The temperature had remained very little affected notwithstanding the extremely septic nature of the surface affected. Examination of the unbroken vesicles showed them to be sterile. Cultures from the mouth gave mixed streptococci and staphylococci. Mr. Ernest Laue saw the patient soon after admission, and was strongly of the opinion that the case was syphilitic—a view in which Sir Almroth Wright also concurred. Three Wassermann tests, one after a provocative injection of diarsenol, proved negative. There was no doubt in his own mind that this was an example of *Pemphigus vegetans* of the grave type, and not syphilitic.

Dr. E. G. GRAHAM LITTLE showed a case of *Nævus anæmicus* (Vörner). The patient was an unmarried lady, aged 33 years. Since birth she had

had the condition. It has shown no change as she had grown older ; it had never been different in colour, and there were no abnormalities of sensation or of the surface of the affected area, the only symptom being the ivory whiteness of the sites affected. These were distributed very much like the fronds of maiden-hair fern, so that the cheek where the condition was most marked, in contrast with the rich fresh colour of her natural complexion, looked as if a spray of white maiden-hair fern were laid on its surface. The condition was also present on the side of the neck. Here the whiteness was much less obvious, and there was probably some lack of pigmentation as well as of the vascular redness.

The distribution, while wholly unilateral and therefore suggesting a metameric segmental area, did not seem to comply strictly with any of Head's areas, the nearest approach being perhaps to his "hyoid" segment.

The disease must be of extreme rarity. No case seemed to have been reported in this country. Lane, of New Haven, U.S.A., writing in 1913, had found no English record, his search of course including American literature. Vörner, who first described and named the condition in 1906, returned to its consideration in a paper ten years later, in which he also noted the fact that while *Nævus anæmiens* was a "*Nævus unius lateris*," it did not follow Head's segmental distributions.*

Dr. E. G. GRAHAM LITTLE showed a case of *quinine dermatitis*. The patient was a demobilised soldier, aged 37 years, who served in Salonika, Turkey and Russia, and left the army in January, 1919. He saw him first on July 1st; he then had a vivid scarlatiniform erythema of three days' duration of the neck, chest, front of elbows, forearms, lower abdomen, groins and buttocks. The rash was very itchy and burning, but he otherwise felt pretty well. The skin of the hands and feet (the palmar and plantar surfaces) was greatly thickened, and was partly exfoliating. The face was quite free. His history at that time was that he had had an attack of malaria three weeks previously, for which he had been given quinine in doses not ascertainable, and that the rash had appeared while he was having this drug. He also described a very similar sequence of events when he was given quinine in Russia in 1917, when he had had malaria.

* *Arch. f. Derm.*, cxxi, p. 376.

His doctor stopped his quinine on his reporting his opinion that the rash was produced by this drug, but found no appreciable difference in the rash, which indeed seemed to spread in extent, but was less congestive, and as the man had again a bout of malaria he resumed quinine in 10-gr. doses *ter die*, without apparently making things worse. At the present time there was a nearly general exfoliation of the skin of the trunk, and the hyperkeratosis of the palms and soles was very marked. But the vivid redness had almost entirely subsided.

The case recalled a very striking record by Sir James Galloway of an erythematous and exfoliative dermatitis following on surprisingly small doses of quinine, but, in contrast with the frequency of quinine medication, dermatitis attributable to it seemed to be remarkably uncommon.

Sir JAMES GALLOWAY said he was inclined to accept the diagnosis of Dr. Graham Little. A patient, whom he had shown some years ago before this Section, got quinine dermatitis when he indulged in refreshing draughts of aerated water, which contained quinine in what were supposed to be tonic doses. This aerated water had a vogue in London at that time. The patient had an extremely vivid erythema, and this was followed by a considerable amount of desquamation in area corresponding to the eruption on this patient. It was a very severe case, and the hyperkeratosis of the palms and soles was considerable in degree.

Dr. J. L. BUNCH showed a case of *pemphigus*. The patient, a boy, aged 10 years, developed pemphigus when three days old, and had had recurrent crops of the disease ever since. The trunk and limbs were now covered with innumerable small bullæ, some ruptured, but mostly containing a clear fluid and rising from an entirely uninfamed base. There was no herpetiform grouping, no itching, and the boy's general health was entirely unaffected. He attended school regularly. The contents of the bullæ were sterile. There was no reason to suspect syphilis, and there was no similar disease in his family. The pemphigus improved under local treatment, and the boy might be free for a day or two, but never longer.

Sir JAMES GALLOWAY said the striking thing about this case was that it was supposed to have started when the child was three days' old. He should think that was almost a record for this type of pemphigus. He had recently had a severe case of "clinical" pemphigus under his care—a child aged 8 or 9 years. The condition started within the first twelve months of life. He thought most cases yielded to proper care, in which cleanliness played an important part, but every now and then a case was found which resisted everything. His own

experience was that the drier they were kept (so far as the patient would permit) the better. In the particular case to which he referred they kept the child dry with various powders, and finally used a powder of "flavine," which seemed to do good. His own impression was that nearly all these cases were locally infective.

Dr. J. L. BUNCH showed a case of *vitiligo with central pigmented moles*. The patient, a boy, aged 14 years, had a large number of vitiligo patches scattered over the trunk and limbs. These varied much in size, and were mostly irregular in shape. Some few were definitely circular. It appeared uncertain exactly how long the lesions had been present, but certain a good many years.

On the right side of the neck was a white patch, about the size of a sixpence, and in the centre of this was a small, pigmented, brown mole. It was elevated slightly above the surface, and could easily be felt. On the right side of the chest was a larger vitiligo patch, about the size of a crown, with a similar brown mole in the centre. But the mole was larger, more elevated, and rather darker in tint. Over the right scapula was another white patch, about 4 in. by 1½ in., oval, and sharply marked off from the surrounding healthy skin. Running in its long axis was a large, brown, pigmented mole, about 3 in. long. It was raised about ⅛ in. above the surface, was papillomatous, and covered with coarse, rough scales.

In January, 1918, he showed a case at the Royal Society of Medicine of a girl, aged 12 years, with two patches of vitiligo, in each of which was a small central mole. Sutton, in the *Journal of Cutaneous Diseases*, 1916, recorded two cases, and Sir H. D. Rolleston, in 1910, seemed to have had a similar case, but it was complicated by jaundice. He had discussed these cases in a paper in the *British Journal of Dermatology*, 1918.*

As regards treatment, the two small moles could easily be removed, and he proposed to excise the larger mole. He had recently seen a case in which similar pigmented moles remained quiescent for many years, and then rapidly took on the characters of melanotic sarcoma.

Dr. J. L. BUNCH showed a case of *Urticaria pigmentosa*. The baby, aged 9 months, was covered with brown urticarial lesions, some macular, some definitely raised. The lesions varied in size. There appeared to be little irritation, and the baby only scratched at night.

The case was shown chiefly because the scalp was extensively

* *Brit. Journ. Derm. and Syph.*, 1918, xxx, p. 203.

involved as well as the face, and he did not remember having seen previously any such marked involvement of the scalp.

Dr. W. J. O'DONOVAN showed specimens and photographs of a case of *dermatitis due to the Carpoglyphus passalarum*. (This case was reported *in extenso* in the *British Journal of Dermatology* for October, 1920, p. 297.)

Dr. ARTHUR POWELL said he thought he had seen reported—probably in German journals—cases of dermatitis attributed to *Carpoglyphus*. He thought it probable the animal was an accidental intruder rather than a causative agent. He had seen it reported that the so-called *Rhizoglyphus parasiticus* of Dalgetty was the cause of what planters call "water itch," "ground itch," or "coolie itch." This was now generally admitted to be due to the entry of the hook-worm. He was present when Dr. Dalgetty first broached his theory and showed specimens of the *Rhizoglyphus*, and at once recognised the animal as a very common inhabitant of decomposing animal and vegetable matter. It would seem as if the animal was fond of keratin-containing matter as a food, and doubtless the peeling epidermis of a diseased foot would attract the animal as a tit-bit. As a parasite *Rhizoglyphus* might safely be wiped out.

Dr. ARTHUR WHITFIELD showed a case of *lupus treated by brass paste*. Most of them had been interested in the description of cases treated in this manner and had tried these preparations. Dr. Ellis, who introduced the method, kindly called on him, and learning of his failure undertook to treat a case in one of his (the exhibitor's) own beds. This woman was aged 48 years, and her lupus began at the age of eight. She had been treated at St. Thomas's Hospital, scraped a great many times, excised once, and had had Finsen light for five years. He thought the dermatologist meant by lupus always one distinct form of tuberculosis of the skin, while other people used the word perhaps rather more widely, to include what they would call scrofuloderma. One of the reasons for which he had picked out this case to show the Section was because, although it was of such long standing, it was evidently not a case in which the patient had any great tendency to succumb to a tuberculous condition. There was a large scar which was quite sound, with no nodules to be found in it. This patient was taken into King's College Hospital, and Dr. Ellis kindly treated her with his brass-paste method. The result of the treatment had been this: it began by ulcerating the lesions pretty severely. Curiously enough, it ulcerated the active edge less than it ulcerated the part of the scar which was not quite sound. The patient also had a temperature on one or two occasions, and

suffered from some constitutional disturbance such as headache. He was bound to say that in his opinion in this case the treatment had done neither good nor harm. It had given rise to some discomfort, but he saw no prospect at all of any permanent improvement as the result of the application of this method.

Dr. ELLIS said he had been disappointed in this case. He recognised when it was presented to him that it was an extremely difficult case to treat. He had treated now something like 120 cases, so he spoke from a good experience. This patient displayed one serious symptom which he had not yet seen to anything like the same extent in other patients who had been treated—namely, the extraordinary constitutional effects. He looked on the whole thing as a question of balance between the germ and the tissues, and there was no doubt in his mind that there was a distinct increase of advantage to the tissues when these applications were made. No doubt in such cases as these in which there was a condition of hyper-sensitiveness—a cutaneous reaction to 1:1000 tuberculin—a great deal more difficulty would be experienced in handling them than was found in a case which did not give so high a reaction. The main and very important fact, however, was that this treatment was potent in its action on tuberculous tissue, which was resolved under its influence. It was definitely proved that it did not kill the organism. It was no trouble now to grow this organism from the treated lupus case. But the fact was very important that the treatment had a specific action without in ordinary cases any constitutional action. It could be given internally.

Dr. ADAMSON said that some eighteen months ago he began to use this treatment. Dr. Ellis very kindly supplied him with material and instructed him in its method of application, and he took some sixteen or eighteen cases of lupus and gave it a trial. At first he was very pleased with the results. The brass ointment when first used picked out the nodules very neatly—better than the pyrogallie acid paste which he had been using. But he found that as soon as the ulcers caused by the removal of the nodules healed up, the lupus nodules reappeared. He continued to treat these cases in this way for six or nine months. In no case did he succeed in curing any lupus patch, and he had now discontinued using the brass ointment.

Dr. SEQUEIRA said his own experience was on all fours with that of Dr. Adamson. He had a number of cases treated by the brass paste, and there was certainly a very definite influence upon the lupus nodules of low resistance, but he did not think that the cleaning out of the lupus nodules thus obtained was better than that obtained with a very strong—33 per cent.—creosote and salicylic plaster. He had not seen a case of lupus cured by the brass paste, and in those cases which he himself called *Lupus vulgaris* he had not seen any results which would incline him to continue the treatment after quite a fair trial.

Dr. GRAHAM LITTLE said he had tried this method largely in his department for the last two years, and with exactly the same result as had been described by the last two speakers. In fact, he would not go so far as Dr. Sequeira, for he did not think that even in lupus of low resistance it had had any appreciable effect. He had given up using it for any type of lupus. It was given a very

enthusiastic trial because they happened to have a new department for tuberculosis started at the hospital at the time of the introduction of the method and the officer in charge was given a free hand with his cases, but in spite of that early enthusiasm he had ceased to use it.

Dr. WHITFIELD said his case was a test case because it was treated by Dr. Ellis himself. He had used the brass ointment method in other cases with the same results. Where they had what dermatologists call lupus—that was a pure tuberculosis of the skin—it was almost, if not quite, the only kind of tuberculosis in which the effect of the remedy could be watched. This was not the case with tuberculous glands, for instance. If Finsen light be applied to a small nodule of lupus and its position be taken with atrophic skin, then one had a feeling that one had done something. But in the case of this paste method the part had been made sore, and that was all that had been done. There were here four of them (Dr. Adamson, Dr. Sequeira, Dr. Graham Little and himself), all of them experienced in the treatment of lupus, but they had failed in every single case. He regarded Dr. Ellis's proposal to treat this case as being in the nature of a friendly challenge. But the challenge had resulted in the patient being left *in statu quo*. There was no improvement in any particular that he could see. Dr. Ellis said that he recognised it at once as a very resistant case. But he (Dr. Whitfield) recognised it at once as a case with a tendency to get well. It was a case in which the lupus had not rapidly extended, and there was a good deal of quite pure and healthy scar. If this treatment would not cure a case of lupus of this kind it must be put with the other failures in the treatment of tuberculosis. A specific treatment that would not cure the tuberculosis of lupus would not cure tuberculosis in any other manifestation. He wished very much to see the cultivation of the bacillus from the lupus in this case, but there again he met with disappointment. This test case had failed both as regards the treatment and as regards the demonstration of the possibility of cultivating the *Bacillus tuberculosis* from the lupus. This question of balance between the tissues and the parasite appeared to him to be the purest theory. There was only this evidence for a balance between the tissues and the parasite—that if the disease extended rapidly the tissues were getting the worst of it, and if it did not extend rapidly or tended to spontaneous cure, the bacillus was not making headway or was getting the worst of it. If one spoke about balance, this case was one surely in which the balance was very equal. He would like in six or nine months' time to bring the case again before the Section after it had been treated by other methods, to show whether these older and better-known methods would not produce a more favourable result.

Dr. G. R. HAMILTON showed a case of *arsenical keratosis and epithelioma*.*

Dr. WILLCOX pointed out that arsenic had the character of depositing itself on the skin of the palms and on the nails and hair in the manner described. The nails in this case showed that the recently grown portion was different from the distal portion, and he took it this corresponded to the growth which had occurred since the patient ceased taking the arsenic. An interesting feature was that sometimes in arsenical cases one might get, not the palmar thickening

* This case is published *in extenso* on p. 15.

shown in this case, but a reddening and sweating. There was one such case shown before this Society some time ago, where he thought the President suggested the possibility of arsenic, and in that case arsenic was found in the urine in appreciable quantities over a very long period.

Dr. W. J. O'DONOVAN said that Dr. Willcox's interesting comments on this superficial pigmentation due to arsenic reminded him of the parallel conditions of pigmentation keratoses and carcinomata found in tar-workers. In a paper by MM. Ad. Bayet et Aug. Slosse, in the *Comptes Rendus de l'Académie des Sciences*, 1919, No. 13, p. 704, the authors related the constant finding of arsenic in the factory dust, pitch, hair, blood and urine of briquette workers. Briquettes were a patent fuel made by mixing and pressing coal-dust and the residue of tar distillation, pitch.

The PRESIDENT said that in the early stages of arsenical pigmentation it was not possible to diagnose it from Pityriasis versicolor by simple scraping. He was under the impression when he first noticed that in some cases the pigmentation of arsenic lay in the horny layer and could be removed by scraping that it was a new observation, but he found that Dr. H. G. Brooke had noted this fact in his Manchester cases. Of course one could not remove the pigmentation in all cases in this way.

Dr. M. G. HANNAY showed a case of *Parapsoriasis en gouttes*. The patient, a man, was aged 22 years. There was nothing to remark in the personal history. The eruption began three and a half years ago (about Christmas, 1916), while in Egypt. Lesions appeared first on abdomen, groins, inner part of thighs, and then spread over trunk and limbs. He thought that at first it was not scaly, but only became so later. There had been practically no itching. At first he had four days' treatment with sulphur ointment, which made it worse, but apart from this he was not aware that any treatment had had any effect.

At the present time the eruption was distributed over the lower part of the neck, trunk, arms, forearms, thighs and legs. There was a very slight degree of pityriasis of the scalp. The face, hands and feet were unaffected. The majority of the nails showed one or more white spots, the size of a small pin's head.

The majority of the lesions were from $\frac{1}{2}$ to 1 cm. in diameter. They were scaly and of a faint rose or fawn colour. There was no induration. They were more or less circular in outline, showing only slight tendency to coalesce. A very few showed a collar of scales at the circumference. On scratching with a blunt curette the scales appeared whiter, but were not typical of psoriasis. On removing the last scales a fine punctate purpura appeared before hæmorrhage. Von Pirquet reaction negative.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

EPIDEMIC PRURIGO AMONG THE ASIATICS INTRODUCED INTO EUROPE DURING THE WAR. W. DUBREUILH. (*Ann. de Derm. et de Syph.*, ser. 6, i, pp. 13-16.)

DURING 1916 and 1917 Dubreuilh observed among the Annamites and Tonkinese numerous cases of an apparently infective pruriginous eruption characterised by papules like those of prurigo or strophilus, which on disappearing left a little brown macule. The eruption was mostly upon the lower part of the body and in the lumbar region. It was certainly not scabies. Glandular enlargement was common. No parasites were found. In hospital a cure was rapidly effected by a weak tar and sulphur ointment. H. D.

ON THE TREATMENT OF THE SARCOID BOECK-DARIER. A. CIVATTE and P. VIGNE. (*Ann. de Derm. et de Syph.*, ser. 6, i, pp. 254-260.)

CONSIDERABLE controversy has arisen as to whether this well-known condition is syphilitic or tubercular in origin. The authors publish a typical case in which the Wassermann reaction was negative and the patient gave a positive reaction to an injection of tuberculin, but was apparently cured by three injections of novarsenobenzol. A biopsy was made both before and after treatment, and although clinical cure had apparently taken place, microscopically the tubercloid structure of the lesion remained almost unaltered. They conclude that it is still probable that the sarcoid Boeck-Darier is tubercloid in origin. H. D.

ON PRURITUS WITH ALOPECIA AND ENLARGEMENT OF LYMPH-GLANDS. A. NANTA and L. BAUDRU. (*Ann. de Derm. et de Syph.*, 1920, ser. 6, i, pp. 145-157.)

THE authors publish the case of a girl, aged 20 years, who suffered from generalised pruritus associated with enlargement of all the lymph-glands. The skin was thickened almost universally. The irritation included the scalp, the hair of which was largely broken and destroyed by continual scratching and rubbing. Examination of the blood and urine disclosed no important abnormality. Examination of one of the enlarged lymph-glands under the microscope did not reveal Hodgkin's disease, but a marked sclerosis, possibly due to radiotherapy, which had been tried. H. D.

ON THE LICHENS AND LICHENIFICATION. M. DIND. (*Ann. de Derm. et de Syph.*, 1920, ser. 6, i, pp. 273-298 and 321-340.)

A PAPER of considerable length, in which the author attempts to prove that Lichen planus and its various modifications are really the same disease as the Lichen simplex chronicus of Vidal or neurodermatitis, and that both conditions are really parasitic in origin. The arguments by which M. Dind tries to defend this thesis are several. Firstly, the histology of the skin taken from the patients. He has made a very careful study of this with some excellent micro-photographs, and he attempts to show that the essential lesion in each case is an increase of the papillary body with a diminution of the interpapillary cones, and that the production of intra-epidermal cavities which is characteristic of Lichen planus

also occurs in Lichen simplex. Secondly, he points out that both conditions may and do occur in the same patient either simultaneously or in succession to one another, and he regards them as merely different aspects or phases of the same disease. Thirdly, while admitting that up to the present the search for the organism which causes either type of lesion has been quite fruitless, he claims that the course and characters of the eruption strongly postulate a parasitic cause. Fourthly, he claims that both types of lesion are very amenable to treatment with arsenic, especially intravenous injections of arsenobenzol.

H. D.

CHAULMOOGRA OIL IN LEPROSY. T. A. HENRY. (*Journ. Trop. Med. and Hyg.*, October, 1920, xxiii, p. 249.)

RECENTLY the interest in chaulmoogra oil as a remedy for leprosy has been greatly stimulated by the results which have been obtained from the employment in the treatment of the disease of ethyl esters prepared from chaulmoogra oil.

It was not until 1900 that the exact botanical origin of chaulmoogra oil was ascertained, namely, that it was not derived from the seeds of the *Gynocardia odorata* as had been believed, but was obtained from the *Taraktogenos kurzii*. Such misnomers as "sodium gynocardate" and "gynocardic" acid unfortunately are still applied to products made from the genuine oil.

It has been shown that chaulmoogra oil, although containing some ordinary fat acids, has as its chief component an acid of a new series, which has been named "chaulmoogric acid," and which differs from ordinary fat acids in being optically active, and in possessing as a part of its molecular structure a closed chain of carbon atoms. In this it resembles hydnocarpus oil, but differs from true gynocardia oil. The evidence seems to show that it is the acid of the chaulmoogric series to which chaulmoogra owes its therapeutic value, and that possibly the lower homologues or their esters are the more active members of the series.

J. M. H. M.

ANIMAL AND VEGETABLE PARASITES.

SARCOPTIC SCABIES IN MAN AND ANIMALS. C. WARBURTON. (*Parasitology*, 1920, xii, No. 3, p. 265.)

THE writer gives a complete historical summary of the work done on sarcoptic scabies, and a full description of the different varieties of parasites found in man and animals. It is a very important contribution to the literature of the subject.

A. M. H. G.

A CASE OF CREEPING DISEASE CONTRACTED IN PARIS. J. DARIER. (*Ann. de Derm. et de Syph.*, 1920, ser. 6, i, pp. 113-120.)

A CASE of myiasis of the hand in a railway employé presented himself at Darier's clinic, where, notwithstanding its unique character, it was immediately diagnosed by all his assistants. There was a red sinuous line along the back of the hand indicating the progress of the larva of the insect, and the patient complained of intense irritation. He was cured by excision of the affected area, which was examined microscopically, and the sections showed clearly the presence

of the larva, which was situated not subcutaneously but subepidermically. Probably it was the *Hypoderma bovis*. H. D.

ON THE RADIO-THERAPY OF RINGWORM ACCORDING TO THE KIENBOCK-ADAMSON METHOD. H. NOIRE. (*Ann. de Derm. et de Syph.*, 1920, ser. 6, 1, pp. 360-363.)

THE author, who has great experience in this matter, calls attention to several important points in the technique. He describes his localising device, consisting of a circle attached to the tube-holder, and from which two limbs proceed, joined by a thread which is brought into contact with the scalp. This serves to keep the scalp at the correct distance, and also to determine the exact position to adjust the tube to in order to make the rays impinge perpendicularly upon the centre of the area to be irradiated. For the measurement of the dose he relies solely on the Sabouraud pastille, and points out certain precautions which must be taken for the sake of safety. Perhaps the most important of these and the one which is least realised in the ordinary way is the necessity of having the anticathode 16 cm. from the scalp. If it is nearer than this the overlapping portions of the scalp do not receive an adequate dose, while if it is more distant they receive an overdose and there is risk of radiodermatitis. H. D.

NEW GROWTHS.

PACHYDERMIE VORTICELLEEE DU CUIR CHEVELU. LENORMANT. (*Ann. de Derm. et de Syph.*, ser. 6, i, pp. 225-243.)

THE author publishes a remarkable case of the above rare condition, which is perhaps better known under the name given by Unna of *Cutis verticis gyrata*, with a clinical and anatomical study of the disease or malformation. It consists of a transformation of an area of the scalp into a thick fatty cap lined by deep furrows, at the bottom of which sparse hairs are to be found while the prominent portions remain quite bald. The tumour is quite innocent, but affects the patient because it is heavy, unsightly and extremely malodorous. In the author's case quite three-quarters of the scalp was involved. It dated from birth. Pathologically he regards the condition as "giant nevus" of the scalp. Occasionally a condition clinically somewhat similar but of lesser dimensions may arise in adult life as the result of a perifolliculitis succeeding some ordinary inflammatory condition of the scalp.

The author treated his case surgically. He was unable to remove the entire growth, but took a large slice off the posterior portion weighing about a pound, and thus made the patient more comfortable and reduced the deformity to dimensions that could be concealed by a wig. H. D.

RODENT ULCER OF ARM. W. McMURRAY. (*Med. Journ. of Australia*, p. 244.)

THE patient was a woman, aged 62 years, mother of three children, all born alive; no miscarriages; good health. She received a blow on the left arm from a slamming door, and a month later a little lump resembling a boil appeared on the middle of the extensor aspect. The skin broke down in the centre, an ulcer formed about the size of a threepenny-piece, exuding a thin, bloody discharge. It spread slowly with a typical raised border and rolled edge. The unusual

features of the case are that she complained of great pain when the sore was touched and a burning sensation when it was exposed to the air.

A photograph representing the clinical aspect of the ulcer is given, but no note is made of the histology—a point of importance, as the ulcer developed in four months.

J. H. S.

AN ENCEPHALOMATOUS NÆVUS. CH. AUDRY. (*Ann. de Derm. et de Syph.*, 1920, ser. 6, 1, pp. 369-374.)

THE author publishes the case of a child, aged 3 years, who presented two tumours—one on the vertex, the other at the lachrymo-frontal region. These were removed surgically, and on microscopical examination were shown to contain nervous elements, proving that they were originally derived from the central nervous system, although the closure of the cranial sutures had shut them off from the brain. The child exhibited also other evidences of cerebral defect, viz. asymmetry of the head, internal strabismus of the left eye and slight lameness of the left leg.

H. D.

PATHOLOGY.

GENTIAN-VIOLET AS A RESTRAINER IN THE ISOLATION OF THE PATHOGENIC MOULDS. D. L. FARLEY. (*Arch. of Derm. and Syph.*, 1920, ii, p. 459.)

THE work of Churchman on gentian-violet has shown that this substance possesses the peculiar property of inhibiting in high dilution the growth of Gram-positive organisms. As most of the skin saprophytes are Gram-positive, it occurred to the writer that it might be of value in restraining the growth of skin contaminants in cultures during the isolation of the pathogenic moulds of the skin and hair, provided that the substance should prove to be non-inhibiting for the moulds themselves.

As a result of the series of experiments detailed in this paper the writer arrives at the following conclusions:

(1) A dilution of gentian-violet of 1:500,000 in solid (Sabouraud's proof) mediums will inhibit the growth of the Gram-positive bacteria.

(2) Fifty-one strains of the higher organisms were found to be capable of growth on maltose mediums containing gentian-violet in as high a concentration as 1:250,000. This group included epidermophytons, achorions, microsporons, trichophytons, sporotricha and actinomyces.

(3) The organisms above mentioned, therefore, seem to be more resistant to the restraining action of gentian-violet than the ordinary Gram-positive bacteria.

(4) Gentian-violet maltose medium (1:250,000 and 1:500,000) gave apparently good results in the isolation of approximately twenty strains of pathogenic moulds.

J. M. H. M.

VITILIGO VULGARIS: ITS ÆTIOLOGICAL RELATIONSHIP WITH SYPHILIS AND THE NÆVI. SASAMOTO. (*Jap. Journ. Dermat. and Urol.*, May and August, 1920, pp. 44 and 64.)

THE author studied forty-two cases in the Dohi Clinic. A history or the stigmata of syphilis were definitely established in 44 per cent., and in most of

these it was a luetic infection of the meningeal sac, as presumably indicated by the Wassermann reaction of the cerebro-spinal fluid.

Support is lent to the likelihood of this aetiology by the frequently segmental character of the localisation, thus suggesting that vitiligo is nothing more than a cutaneous manifestation of trophoneurotic disturbances brought about by a "ganglio-radiculitis specifica."

A further study (August, 1920) has resulted in the following observation :

(1) Vitiligo begins mostly in segmental areas, in which also disturbances of the sympathetic system can be demonstrated by the careful investigator. (Such are alteration of sensibility, Cutis anserina, and hyper- or hypo-secretion of sweat.)

(2) Such sympathetic disturbance is not always present, but when it occurs will overlap the vitiligo lesion itself, thus precursing the eventual spread and numerical increase of the lesions.

(3) All old cases of vitiligo show disturbances of the sympathetic, the function of which would appear to be lowered by the virus of syphilis.

(4) Such cases are in a state of vagotonus, *i.e.* the vagal tonus is raised owing to removal of the normal sympathetic check. Such a theory explains the common occurrence of vitiligo in Graves' disease, Addison's disease, scleroderma and myxœdema. (These are not included in the 44 per cent. luetic group.)

(5) The histology includes atrophy of the capillaries and minute vessels, perivascular cell infiltration, mostly round-celled, with mast-cells in the periphery. Atrophy of the sweat-glands is common.

(6) Hyperexcitability of the periphery of the leucodermic spot must be ascribed to a degeneration of peripheral nerve-fibres, secondary to a primary effect of more central origin, *i.e.* in the ganglia.

(7) The virus of syphilis in such cases appears to have a selective action on sympathetic ganglion cells and unmyelinated nerve-fibres.

(8) Hereditary syphilis appears to play a bigger part in the production of vitiligo than the acquired forms.

H. S.

REVIEWS.

THE EXTRA-PHARMACOPEIA.*

It is just five years since the last edition of this work made its appearance, so that it goes without saying that a very large amount of new material has been incorporated in the present edition. This is summarised in a preface which extends over some twenty pages of small print, so that it will at once be obvious what an enormous amount of labour has been entailed in its production. The following are among the subjects which are of special interest to dermatologists. A full account of the various preparations of antimony used in the treatment of leishmania cases is given together with a complete survey of the literature of the subject. The use also of antimony in syphilis, especially of antimony ammonium potassium tartrate (anti-lueticin), is noted in detail.

The authors of this work were early in the field in collecting the literature of

* *The Extra-Pharmacopœia*. Vol. I. By W. H. MARTINDALE, Ph.D., Ph.Ch., F.C.S., and W. W. WESTCOTT, M.B., D.P.H. Seventeenth Edition. Fcap. 8vo. Pp. 1115. London : H. K. Lewis & Co., Ltd., 1920. Price 27s. net.

the arseno-benzol preparations, and each addition of *The Extra-pharmacopœia* has added fresh material. Some of the references to the older papers have now been omitted to make room for the most recent work on the subject.

Among recently worked out antiseptics a full description is found of acriflavine, brilliant green and malachite green—substances which are now of considerable value in the treatment of skin sepsis.

Therapy by colloidal metals receives considerable attention, and the production of these substances both by chemical and electrical methods is described. Considering the vogue which colloidal metals now have in general therapy, and the ignorance which most of their users have of their nature and preparation, a perusal of this chapter, including the remarks relative to the subject in the preface, will not be wasted.

The uses of intramine are mentioned, but it is rather surprising to see that ferrivine is still included, as it appears to have been given up by its original introducer.

Some of the most interesting original work in the book is that done with Chaulmoogra oil. The authors have fractionated the oil into two groups which they name sodium chaulmoograte A and C. The former consists of salts of the higher acids with relatively higher melting-points, while the latter is palmitate-free and contains salts of the acids with relatively low melting-points. The former is given by the mouth and the latter by intra-muscular injection, a combination of the two utilising the total active constituents of commercial chaulmoogric acid.

The chapter devoted to vaccines and antitoxins is full of useful information, as in former editions, and several important additions are noted. There is one error which might be with advantage removed, namely: that the "bottle bacillus" is a synonym for the "acne bacillus."

It would be possible to point out alterations and additions *ad infinitum*, but it is quite unnecessary, as what has already been noted should be sufficient to make all dermatologists get the book and obtain this information first hand. The profession owes a debt of gratitude to the authors for collecting into a small compass such an immense amount of valuable material.

BOOKS RECEIVED.

Diseases of the Skin: A Text-Book for Students and Practitioners. By J. M. H. MACLEOD, M.A., M.D., F.R.C.P. With Coloured and other Illustrations. Pp. xx + 1307. royal 8vo. London: H. K. LEWIS & Co., LTD. Price £3 10s. net.

Genito-Urinary Surgery and Venereal Diseases. By E. MARTIN, A.M., M.D., B. A. THOMAS, A.M., M.D., and S. W. MOORHEAD, M.D. Twelfth Edition. Pp. 928, 421 Engravings and 21 Coloured Plates. Philadelphia and London: J. B. LIPPINCOTT COMPANY, 1920. Price 35s. net.

Syphilis. By LOYD THOMPSON, Ph.B., M.D. Second Edition. Pp. 486, 81 Engravings and 7 Plates. Philadelphia and New York: LEA & FEBIGER, 1920. Price \$7.00.



Right Side of Trunk.

TO ILLUSTRATE THE ARTICLE ON HUMAN GLANDERS BY DR. F. H. JACOB.

THE BRITISH JOURNAL
OF
DERMATOLOGY AND SYPHILIS
FEBRUARY, 1921.

A CASE OF HUMAN GLANDERS.

F. H. JACOB, M.D., M.R.C.P.LOND.,

WITH PATHOLOGICAL REPORTS BY

HUBERT M. TURNBULL, M.A., D.M.,

Director of the Pathological Institute of the London Hospital;

JOSEPH A. ARKWRIGHT, M.A., M.D.,

Assistant Bacteriologist, Lister Institute; and

GERTRUDE M. DOBRASHIAN, M.B., B.S.,

Pathologist, Nottingham Municipal Laboratory.

HISTORY.

THE patient, a man, aged 31 years, was a farmer. He attributed the origin of his complaint to infection from the diseased udder of a cow. The udder of this cow was affected with a series of small lumps, which broke and "discharged water and matter." The man who previously milked the cow had a few places on his arm, said to have been exactly the same as those from which the patient suffered. The patient then took over the milking of the cow; the original milker got quite well, but he himself became infected.

Skin.—The primary lesion was an ulcer which reached the size of about half-a-crown, discharged a great deal of matter and took about three weeks to heal. It appeared in August, 1917, and was on the radial border of the right wrist. The patient attributed this to the

fact that, as he milked the far nipples, his wrist would repeatedly strike against the diseased part of the udder.

This primary lesion was followed by a series of secondary lesions which continued to come out from that time until his death. They appeared in groups becoming more and more numerous for about a month, then dying down, becoming very few, then almost disappearing for about fourteen days. During the latter part of his illness there was no free interval. These secondary lesions occurred all over him, scalp, face, body and limbs, but the major incidence was on the limbs, back and flanks (Coloured Plate and Figs. 1 and 2).

Each lesion (Coloured Plate) commenced as a small papule; this rapidly spread, and within twenty-four hours had increased to about the size of a shilling. It was indurated, and on picking it up between the fingers felt exactly like a typical Hunterian chancre; it was confined entirely to the skin. It had by this time become hæmorrhagic in the centre, giving a purplish-red appearance, the colour of which did not disappear on pressure; around this hæmorrhagic centre was a narrow yellowish ring, marking the indurated margin; beyond this again was some œdema, in some instances hardly noticeable, in others very marked, and pitting on pressure. Rapid evolution continued, the yellow indurated margin continuing to spread rapidly, while the central area thinned out and became pale brown and the intervening territory became thickened and manve from hæmorrhage. Many of the lesions spread in one direction only, tending toward a horse-shoe formation, or more often a scroll arrangement. The total diameter of such a patch was usually $4\frac{1}{2}$ in. at the end of five days. One lesion in the loin reached 9 in. in five days.

It next happened in some areas that new lesions arose in the centre of the discoloured area upon which the lesion had died away, and these in their turn went through the same course, this happening again and again and again.

Thus rapid devolution followed the rapid evolution. A week was sufficient for the lesion to run its course, passing over and leaving no induration but only a stain. Then in a few days more the rash would reappear on the old site, and go through the same change as before. The finest and most typical lesions were on the thigh and body. These are seen in the very accurate painting by Miss Ethel Morton (Coloured Plate).



FIG. 1.—Left side of trunk and shoulders. Many large, spreading lesions.

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None of the secondary skin-lesions ulcerated, except some which appeared upon the scalp and face soon after the onset of his illness. These ulcerated, healed, and left thin white scars. A thicker scar was present on his right wrist, at the site of the primary ulcer.

The process outlined above was modified on the whole of the right forearm, the first part affected. Here the structure of the skin underwent a slight permanent change, became thinned, and assumed the colour of a very light port-wine stain; the rash here came up with more œdema but was less hæmorrhagic, and, when the plaques were numerous, the arm became very swollen with œdema and somewhat painful.

There was no pain or irritation with the rash, but the œdema of the arm was on two occasions sufficiently tense to cause some pain.

Throat.—Towards the end of February, 1918, fourteen days before I first saw him, he began to have trouble in his throat. He came under my care early in March. He then presented a large, thick, hard slough, covering the whole surface of the left tonsil and the left half of the soft palate. There appeared to be deep ulceration of the whole of this area; a portion of the soft palate had already been destroyed. The anterior margin of this slough-covered area of the soft palate showed a raised edge and the same hæmorrhagic condition which was present in the skin-lesions. The odour from the throat-lesion was most offensive.

He was admitted to the nursing home on March 13th, 1918, with a considerable portion of the soft palate and uvula destroyed. The throat condition spread over the whole of the soft palate on to the hard palate, the buccal surface of the cheek, and the gum around some of the teeth. Very slowly a thick, hard slough separated, and the ulcerated area finally healed up. A thin flake of bone came away from the hard palate. The whole of the uvula and a V-shaped portion of the soft palate were destroyed.

Eyes.—Lesions occurred on the eyelids and on the conjunctivæ. These were mild in character and caused no permanent damage.

The *lymphatic glands* in the neck and elsewhere, the *spleen* and the *liver* were not at any time enlarged.

The *temperature* while the patient was in the nursing home was raised, varying usually from 100° to 102° F., with only a small

daily excursion. The *pulse* was mostly between 100 and 120, of fair quality and regular.

General condition.—Considering the temperature, septic throat and rash, the general condition was fairly good. He could walk about fairly well, was thinner than formerly, but not very thin. There was no evidence of any lesion beyond those visible on the skin and in the throat. The heart, lungs, abdomen, urine and nervous system were all normal.

When he left the nursing home on May 15th, 1918, the last portion of slough on the right buccal mucous membrane had just come away, and the cheek was healing nicely. The skin-lesions were still coming out and dying away, as they had done during the whole two months that he was there, and over the same areas. The temperature and general condition were unaltered. There had been no pain in swallowing until the slough separated, and the pain then was not severe.

PATHOLOGICAL INVESTIGATION.

A recent lesion of the skin of the arm of about twenty-four hours' duration was excised, put in formaldehyde in normal saline, and sent to Dr. Turnbull of the London Hospital, who very kindly sent a report on the microscopical condition found. Dr. Arkwright, of the Lister Institute, made inoculation experiments with the patient's blood, but unfortunately I did not realise that an excised lesion would have been much better for this purpose, and the patient would not consent to our removing a second piece of his skin.

Dr. Turnbull's Report (S.D. 301, 1918).

Macroscopic examination.—A portion of skin and subcutaneous fat ($2.2 \times 0.4 \times 0.7$ cms. deep), in formaldehyde solution. Small hairs scattered over surface. In centre of surface was a purple area, 1 cm. long and occupying all the breadth. This area differed in colour only from the adjacent epidermis. On the cut surface the epidermis formed a narrow white line throughout. The dermis was 0.3 cm. deep beneath the purple area seen upon the surface, and decreased to 0.2 cm. on either side. Immediately below the purple area was a zone of red-brown and red. The inferior boundary of this zone was irregular. The zone occupied half the depth of the dermis. The remainder of the dermis was white. The specimen was bisected. One portion was placed in 10 per cent. saline formaldehyde for Levaditi's stain, with a portion of syphilitic liver as a control; the other was embedded in paraffin.

Microscopic examination.—Sections were stained by the following methods: Ehrlich's haematoxylin and eosin; Weigert's iron-haematoxylin and van Gieson's mixture; lithium carmine and Weigert's fuchselin; lithium carmine and Weigert-Gram; Twort; Spengler; Unna-Pappenheim.



FIG. 2.—Right flank, thigh and buttock. Shows the general discoloration left by previous lesions, and two new lesions, of which one is spreading upwards from the thigh and the other is spreading forwards from the back.

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The sections show a portion of skin containing hairs and sebaceous and sweat-glands. In the centre of the portion is a conspicuous infiltration of the dermis; the skin on either side appears normal. The epidermis is covered by a horny layer. Small groups of the basal cells are pigmented. The papillae throughout are few, small and ill-defined.

Over the infiltrated area the epidermis is slightly thicker than elsewhere, and is infiltrated with a very few neutrophil leucocytes.

In the infiltrated area there is relatively little affection of the papillary zone of the dermis; the infiltration is intense in the upper half of the remainder of the dermis, and extends downwards in places so as sometimes to reach upward extensions of the subcutaneous lipomatous tissue. The infiltration is obviously perivascular in distribution, affecting the walls of veins and arterioles, and broad zones of tissue round arteries, veins and capillaries. The tissue of the walls of the vessels is dissociated, extensively necrosed, and infiltrated with leucocytes, red corpuscles and fibrin. In the majority of such necrosed vessels the lumen is narrow and ill-defined owing to these changes in the media; in other vessels the lumen is distended by leucocytes. The larger arteries are unaltered. The zones round the vessels are also extensively necrosed and infiltrated with leucocytes, red corpuscles and fibrin. The elastic fibres in the infiltrated areas are dissociated and in part destroyed. Nets of delicate filaments of fibrin are also present in the dermis between the perivascular zones of infiltration, and also occasionally in the subjacent lipomatous tissue.

With the exception of a few eosinophil leucocytes, the infiltrating cells are neutrophil polymorphonuclear leucocytes; the nuclei of many are fragmented.

The histological picture is that of an intense, acute, vascular and perivascular hæmorrhagic necrosis with fibrinous exudation and purulent infiltration. The appearances suggest bacterial embolism, but with the exception of one Gram-positive bacillus in a section stained by the Weigert-Gram method and one bacillus in a section stained with Twort's mixture, the three methods for the demonstration of organisms proved negative.

In the tissue stained by Levaditi's method no spirochaetes were found, although numerous spirochaetes were stained brightly in the portion of syphilitic liver employed as a control to the method.

Dr. Arkwright reported that nothing was revealed by microscope, culture, or inoculation of rabbits or guinea-pigs.

Dr. Dobrashian's Clinical Laboratory Reports.

March 11th, 1918: Throat swab.—Direct films show vast numbers of micro-organisms, chiefly cocci, both Gram-positive and Gram-negative, also bacilli, Gram-positive and Gram-negative. Further details not noted.

Cultures from throat.—Streptococci, Gram-negative bacilli which liquefied gelatine, and a few slender diphtheroid bacilli.

Blood-count.—Red blood-corpuscles, 4,700,000 per cmm.; leucocytes, 22,600 per cmm.; hæmoglobin, 75 per cent.; colour index, 0·8.

Differential leucocytic count of 200 cells.—Polymorphonuclears, 88·5 per cent.; lymphocytes, 7·0 per cent.; hyalines, 2·5 per cent.; eosinophils, 1·5 per cent.; basophils, 0·5 per cent.

Blood-culture.—Negative. *Wassermann reaction.*—Negative.

March 16th, 1918: Throat swab.—Taken from raw surface after removal of a

portion of the slough. Grew a pure culture of streptococci only (two strains) from which a vaccine was prepared.

Streptococcus.—*Strain A* produced a flocculent deposit in broth, the broth remaining clear; it grew in chains of moderate length.

Strain B was a very minute coccus growing in short chains and producing slight turbidity in broth. *Strain A* caused hæmolytic, whereas *B* did not. Both produced acid without coagulation in litmus milk; neither reduced neutral red or liquefied gelatine. *Strain A* fermented glucose, *B* did not; neither fermented mannite, and both fermented lactose and saccharose.

Urine.—Acid in reaction. No sugar; no albumen. Centrifuged deposit showed only a few squamous epithelial cells and amorphous urates. *Cultures*.—*Bacillus coli* and a very small Gram-positive coccus with a tendency to grow in chains, and resembling the short-chained streptococcus isolated from the throat.

March 28th, 1918: Blood-cultures.—No growth after six days' incubation.

Wassermann reaction.—Negative.

Blood-count.—Showed a leucocytosis of 19,600 per cmm., of which 75.5 per cent. were polymorphonuclears.

April 25th, 1918: Throat swabs.—Two were examined for glanders, with a negative result. The predominating organism in the cultures was a *Staphylococcus aureus*, with still large numbers of streptococci and a few colonies of *Staphylococcus albus*.

The staphylococci isolated from the throat both gave the cultural reactions of a *Micrococcus pyogenes*, one producing orange-coloured colonies and the other white colonies on agar. The only other differences were that the *Staphylococcus aureus* liquefied gelatine more rapidly than did the *Staphylococcus albus*, and also produced acid and clotting in litmus milk in twenty-four hours, whereas the *Staphylococcus albus* did not show this until the third day. The reactions in the sugars were identical, as was also their behaviour in broth, blood broth and neutral-red broth.

TREATMENT.

The following remedies were given a thorough trial without effect on the disease. The very frequent attention to his throat for which the nursing staff were responsible did, however, avert what appeared to be impending disaster there:

- Liq. ferri perchlor. and pot. chlor.
- Hydrogen peroxide spray for throat.
- Hydrarg. perchlor. gargle.
- Carbolic gargle.
- Galyt intravenously.
- Quinine hydrochlor., gr. v. *t.d.s.*
- Sodium salicylate, gr. v. *t.d.s.*
- Pil. hydrarg.
- Pot. iodide.
- Collosol manganese.
- Ung. hydrarg. nitratis, applied to the rash.
- Anti-streptococcus serum.
- Autogenous streptococcic vaccine.



FIG. 3.—Right cheek. Early stage of ulceration.



FIG. 4.—Right cheek. Later stage of ulceration.

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FURTHER COURSE OF CASE.

I heard no more of the patient until September, 1918, when Dr. Kilvert, of Derby, very kindly rang me up to tell me that he had him under his care in the Derby Infirmary. He had been admitted there early in August with a hole through his cheek, showing his teeth from the outside, due apparently to a relapse of the condition in the buccal membrane which had developed into a cancrum oris (Figs. 3 and 4).

Owing to Dr. Kilvert's kindness I was able to see him again. The condition of the face was most horrible, and his general condition very bad.

The skin-lesion was pretty much as before, but with less colour in the rash and less induration. Dr. Kilvert also investigated the case, with only negative results, as had been mine.

The patient died a few days later, September 26th, 1918, and I was privileged in being allowed to be present at the autopsy, which, however, showed nothing abnormal in any of the internal organs, with the exception of some small areas in the lungs, which appeared to be of the nature of a terminal broncho-pneumonia.

Dr. Kilvert very kindly gave me portions of the post-mortem tissues. Some of this material I sent to Dr. Turnbull, and some, together with a sample of the blood, to Dr. Arkwright. The latter reported that his examination was negative from the point of view of finding a causal agent. Dark-ground examination of the serum showed nothing like a spirochæte; cultures, aerobic and anaërobic, yielded nothing hopeful. The post-mortem material gave on culture a *Streptococcus longus*.

Dr. Turnbull's Report (S.D. 1002, 1918).

Portions of tissue, labelled as follows, were received in formaldehyde solution on October 12th, 1918: (1) Skin, with papular rash, from abdomen. (2) Skin, with ordinary rash, from buttock. (3) Skin from region of great trochanter. (4) Palate. (5) Lymphatic gland from groin. (6) Lung. (7) Spleen.

Macroscopic examination.—In the description of the naked-eye appearances of the portions of tissue on arrival there are no observations worthy of record, the colours having been removed by fixation.

Microscopic examination.—Portions of all seven pieces of tissue were embedded in paraffin, and sections were stained in hæmatoxylin and eosin, in Weigert's iron-hæmatoxylin and van Gieson's stain, in Weigert's fuchselin and neutral red, in Unna-Pappenheim mixture, in Gram's stain and neutral red, in Twort's

stain, in carbol thionin blue, in polychrome methylene-blue, and by Spengler's method. Other portions of the skin from the abdomen, buttock and region of great trochanter and a portion of the palate were placed in 10 per cent. saline formaldehyde, and put through Levaditi's method, together with a portion of congenital syphilitic liver as a control.

A. HISTOLOGY.

(1) *Skin from abdomen.*—In the dermis there is a zone of œdema and moderate cellular infiltration, corresponding to the horizontal net of vessels which lies immediately beneath the papillary zone. Round the vertical vessels entering the papilla there is very slight infiltration. In places the œdema extends right up to the epidermis. There are also a very slight infiltration round the vertical vessels which lie beside the sweat-ducts and glands, and a slight infiltration of the loculi of subcutaneous lipomatous tissue which are enclosed in the lower part of the dermis.

The infiltration is obviously perivascular, and lies chiefly round the smaller veins and capillaries. In the infiltration are neutrophil and eosinophil leucocytes. The neutrophil leucocytes are more abundant than the eosinophil, but they are scanty except in a few areas in which the infiltration is of exceptional magnitude. Many are degenerate or necrosed. The great majority of the cells of the infiltration are lymphocytes and inflammatory cells, which may conveniently be called "tissue-free-cells," to distinguish them from cells of the blood. Close to the walls of the vessels, that is to say in the more strictly adventitial infiltration, the majority of these "tissue-free-cells" are of from 6 to 7 micra in diameter. Their cytoplasm is deeply basophil. The nucleus is frequently eccentric. It is relatively small, round, and usually pycnotic; occasionally it is larger, and the chromatin is gathered into demilunes upon the nuclear membrane. A clear demilune is sometimes present in the cytoplasm on the central side of the nucleus. These cells, therefore, resemble plasma-cells except in that the nuclei are not of the characteristic "clock-face" type. Less numerous are larger spheroidal or polygonal cells with a less basophil cytoplasm and an oval or reniform nucleus, showing an abundant delicate net of chromatin. There are also a few, free, rounded tissue-mast-cells. Further from the vessel-walls, that is to say in an extra-adventitial infiltration, there is an increase in the number of spindle fibroblasts. These fibroblasts are associated with many cells which have the characteristics of the cells said by Maximow to be Ranvier's clasmatocytes. There are also frequent groups of large cells, measuring 12 to 13 micra in diameter. The nucleus is relatively small, for instance 8 by 5 micra, is usually a bent oval, and has a delicate structure. The cytoplasm is very faintly stained and rendered reticular by small vesicles. Several of these cells contain minute pigment-granules similar to those in the clasmatocytes. There are a very few conspicuously large mononuclear cells, measuring for instance 19.5 by 14 micra, in which the cytoplasm is homogeneous and deeply basophil.

The collagenous fibres are rarified by the œdema round the horizontal vessels in the subpapillary zone. The elastic fibres are not destroyed. Hyaline and granular thrombi are present in a few venules and capillaries.

There is considerable pigmentation of the basal layers of the epidermis. In several areas the epidermis is thickened and is conspicuously pale. In these areas the cells throughout the Malpighian layer, inferior to the stratum granu-

losum, show perinuclear vacuolation and complete loss of demarcation and of prickly borders. In other areas similar changes are confined to two or three layers of cells immediately beneath the stratum granulosum. Two interpapillary processes of the epidermis are necrosed at a spot where the oedema of the dermis reaches the epidermis.

(2) *Skin from buttock*.—The infiltration is much greater in this section. As in section (1) there is a band of oedema, fibrinous exudate and infiltration about the horizontal vessels which lie immediately beneath the papillary zone. This band is widened to form two relatively large areas of infiltration. Except for a very slight infiltration round some of the papillary capillaries the papillary zone is unaffected. In sections treated with van Gieson's mixture it is stained red, and contrasts conspicuously with the pale, yellow, oedematous and infiltrated zone beneath. The infiltration extends downwards about the smaller vertical vessels which accompany the sweat-ducts and glands, and reaches and involves the loculi and bays of subcutaneous lipomatous tissue in the deeper part of the dermis. In its descent it becomes ever less, being very slight in the subcutaneous lipomatous tissue. Round the hair-follicles there is a zone free from infiltration.

Where the infiltration is least it differs from that in the preceding section in the following respects. In the adventitial infiltration the cells with deeply basophil cytoplasm are less numerous, and many are typical plasma-cells. The larger, less basophil, spheroidal and polygonal cells are more numerous. Among, and apparently derived from, these are cells with vesicular cytoplasm such as have been described in the abdominal lesion. Neutrophil leucocytes are more numerous. The extra-adventitial infiltration is very much greater and more extensive. It consists essentially of the cells with vesicular cytoplasm. The majority are larger than in the abdominal lesion. Many examples, for instance, measure 20 or more micra in diameter. There are clear transitions to these cells from fibroblasts and clasmotocytes.

Where the infiltration is greater the adventitial and the extra-adventitial tissues are packed with neutrophil leucocytes. In places karyorrhexis of leucocytic nuclei is conspicuous. The leucocytes are so numerous as to obscure the tissue-free-cells, which are almost all large and vesicular. These cells, and swollen fibroblasts with very large pale nuclei are present, however, throughout the infiltrations, and are conspicuous in the peripheral parts thereof. The tissue has not been dissolved by the leucocytic infiltration, but the bundles of collagen fibres are merely separated into delicate fibrils by the infiltrating cells (compare Fig. 5). There appears to be a little destruction of elastic fibres.

Vascular changes are conspicuous. Many veins and venules contain hyaline thrombi, or filamentous fibrinous thrombi, or leucocytes and fibrin, or leucocytes and desquamated endothelium. The walls of many of the veins, venules and capillaries are necrosed, the necrosed fibres of the walls of the veins being separated by infiltrating leucocytes. Occasionally the vessels are completely collapsed, the endothelial lining filling the shrunken lumen. The majority of the arterioles are not altered; a few show hyaline necrosis.

In the epidermis pigmentation is very slight. Over the greater part of the infiltration there is a slight degree of the changes which are conspicuous in the skin from the abdomen—that is to say, of perinuclear vacuolation and loss of differentiation between the cells of the Malpighian layer.

(3) *Skin over great trochanter*.—The changes and their localisation are

essentially similar, but much severer in degree and more extensive in distribution. The oedema, fibrinous exudate and infiltration again obviously surround the horizontal subpapillary vessels, the vertical vessels about the sweat-glands and ducts, and the vessels in the superficial loculi of subcutaneous fat. In the central parts of the tissue, however, the infiltration is confluent, and occupies large areas of the dermis and the whole of some of the superficial loculi of subcutaneous lipomatous tissue. But the papillary zone is unaltered except for a very slight infiltration round the capillaries. There is also an unaltered zone round the hair-follicles. The infiltration round the sweat-ducts and glands does not invade these structures. There are a few focal hæmorrhages.

The infiltrated areas are packed with neutrophil leucocytes. Degeneration, karyorrhexis and fragmentation of these leucocytes are very conspicuous. There are many large mononuclear phagocytes (Fig. 5). Many of these are loaded with small oval and round bodies, which usually show a faintly stained central mass of chromatin. The appearances suggest intra-cellular parasites. Comparison, however, of all the phagocytes shows that the contained bodies exhibit a clear transition from entire leucocytes to partially and completely fragmented leucocytes. The phagocytes are most numerous where leucocytic disintegration is greatest.

The intense leucocytic infiltration and fragmentation are not associated with solution of the tissues such as is found in true abscess. There is in places a granular hæmatophil necrosis of the interstitial tissue. There also appears to be destruction of elastic fibres. Very delicate collagenous fibrils and many elastic fibrils are still present, however, between the cells. Further, greatly swollen fibroblasts and tissue-free-cells other than the phagocytes mentioned above are still recognisable among the leucocytes. These tissue-free-cells are of the larger types seen in the previous sections—that is, the spheroidal and polygonal cells with oval, curved and renal nuclei, and the vesicular cells. In many vesicular cells the nuclei show karyolysis; in some the nuclei are absent. The phagocytes differ from the vesicular cells only in being phagocytic.

Vascular changes are conspicuous. The arteries are unaltered. There is hyaline necrosis of the walls of a few arterioles. The veins, and more especially the venules, frequently show abnormal changes. In many the endothelial lining, shrunken together, fills the lumen, whilst the widened wall consists of a net of necrosed fibrils enclosing leucocytes within its meshes. In others no endothelium is visible, the necrosed wall, infiltrated with leucocytes, occluding the lumen. There is also necrosis immediately round capillaries; several capillaries are collapsed, the lumen being filled by the shrunken endothelial lining. There are thrombi such as were described in the preceding section.

In the epidermis there is considerable pigmentation of the basal cells. There is only a trace of the abnormalities seen in the skin from the abdomen; very few cells show perinuclear vacuolation, and prickly borders can be recognised between almost all the cells.

(4) *Palate*.—The tissue has one surface partially covered by squamous epithelium, and another surface covered by stratified, columnar, ciliated epithelium. Beneath the squamous epithelium is voluntary muscle, and beneath the ciliated epithelium is a large mucous gland.

There is extensive ulceration of the surface covered by squamous epithelium. The base of the ulcer is occupied by a narrow zone of necrosed tissue infiltrated

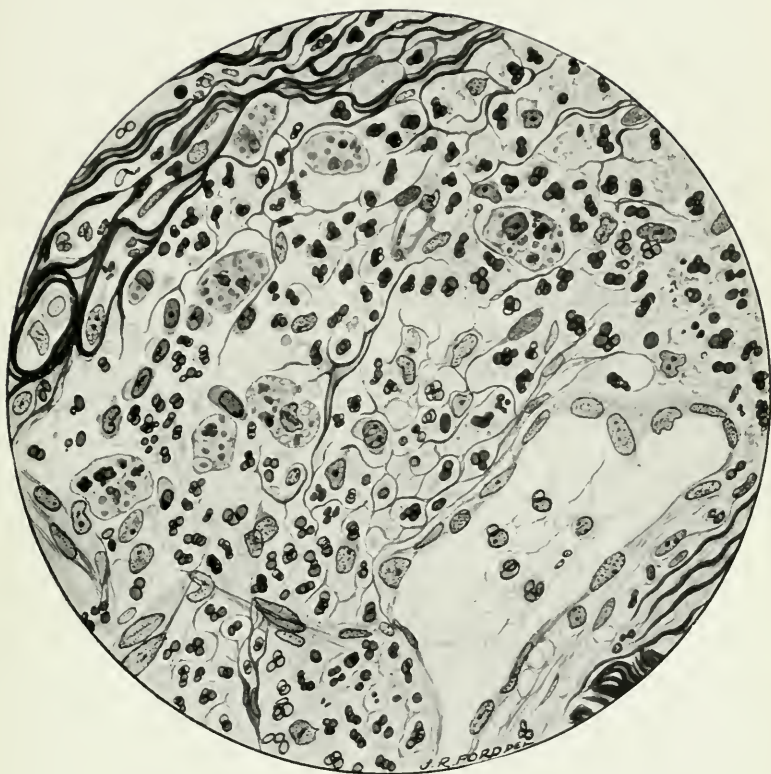


FIG. 5.—Drawing of microscopic preparation of skin over great trochanter. Weigert's iron-haematoxylin and eosin. $\times 470$. Narrow zone of infiltration in the dermis at the side of a vessel containing thrombus. The cells of the infiltration are: (1) Free tissue-cells; (2) macrophages derived therefrom and filled with remnants of ingested cells; (3) neutrophil polymorphonuclear leucocytes.

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with neutrophil leucocytes. Deep to this is an infiltration in which the leucocytes become less numerous. This differs from the infiltrated areas in the skin in that typical plasma-cells are very abundant, few of the larger tissue-free-cells are vesicular, clasmatoocytes are not represented, and karyorrhexis is not conspicuous. The lumen of a large vein is almost completely occluded by a granulomatous endophlebitis of similar histological character. A less intense inflammation involves the subjacent muscularis. There is no ulceration of the surface covered by stratified, ciliated epithelium. The subjacent submucosa is greatly infiltrated. Here, again, plasma-cells are present in very great number. Neutrophil leucocytes are numerous. The infiltration extends into the interstitial tissue of the mucous gland, and is here represented almost entirely by plasma-cells and occasional tissue-mast-cells.

(5) *Lymphatic gland, from the groin.*—In the sinuses the endothelial cells have proliferated, and there are numerous neutrophil leucocytes and a few red corpuscles. The lymphadenoid tissue is relatively scanty and contains very few secondary cortical nodules. It contains numerous large, free mononuclear cells derived from the cells of the reticulum, numerous plasma-cells, a considerable number of neutrophil leucocytes and a few eosinophil leucocytes. In much of the gland the lymphocytes of the adenoid tissue are almost entirely replaced by plasma-cells and these desquamated cells of the reticulum.

(6) *Spleen.*—Hyaline necrosis of arterial walls is conspicuous. The Malpighian bodies are small. In the pulp the capillary veins are wide; the majority are empty, others are engorged with blood. In the reticular strands of the pulp the fibrils are swollen, and often ragged and necrosed. The meshes of the reticulum contain many large mononuclear "endothelial" cells, numerous plasma-cells, a few eosinophil leucocytes, and, in places, numerous neutrophil leucocytes.

There are several small, rounded areas in which the tissue is greatly rarified, and is occupied by neutrophil leucocytes. These small purulent areas lie close to extra-trabecular arteries, and therefore frequently replace part or whole of a Malpighian body.

(7) *Lung.*—A portion from a margin. One bronchiole is filled with pus. All the others are almost completely occluded by plugs of vascularised granulation-tissue. The granulation-tissue of more recent development includes islands of fibrin and is infiltrated with neutrophil leucocytes. The cleft-like remnants of the lumina of these bronchioles are filled by neutrophil leucocytes. The walls of the bronchioles are greatly infiltrated. The most numerous cells of the infiltration are plasma-cells, leucocytes and lymphocytes. The bronchioles are surrounded by a narrow zone of peribronchial pneumonia. The majority of the alveoli of this peribronchial pneumonia contain fibrin and pus; a few contain only desquamated epithelial cells; in some a fibrino-purulent pneumonic exudate is undergoing organisation. The remainder of the lung is greatly distended by emphysema. There is much rupture of the walls of the distended infundibula, and in the centre of the section a large emphysematous cavity extends from one pleural surface to the other. The only evidence of inflammation in this emphysematous tissue is found in a narrow zone of inflammatory exudate resting against the walls of a few of the alveoli. The exudate consists either of coagulated albumen containing fibrin filaments, or of neutrophil leucocytes, or of red corpuscles, or of desquamated epithelial cells.

B. BACTERIOLOGY.

The most widely-distributed organism is a Gram-negative bacillus, which is not acid-fast. The majority of these bacilli measure in length over 1 and under 3 micra: a few measure only 1 micron; several measure 3 to 4 micra; there are also a few longer forms, the longest measurement recorded being 11 micra. In breadth they measure from 0.27 to 0.5 micra, the majority being between 0.3 and 0.4 micra. Their ends are rounded. Many, especially the shorter examples, are curved. Frequently the organism is unequally stained, deeply-stained "heads" contrasting with pale areas; the "heads" are frequently confined to the two poles. A few examples are centrally constricted so as to resemble a slender oval diplococcus. They are not stained easily. Only a few, and these faintly stained, are recognisable in sections stained in neutral red. In Twort's mixture more examples can be identified, but they are poorly stained, doubtless owing to the unsuitable fixative employed. In sections stained overnight in carbol thionin-blue, or stained in polychrome methylene-blue differentiated in Unna's glycerine-ether mixture, they appear to be much more numerous and are clearly defined. Examples are deeply stained and sharply defined in tissue subjected to Levaditi's method. As a general rule the more deeply and uniformly stained examples are narrower than those faintly or unequally stained. They are both extra- and intra-cellular, the great majority being extra-cellular. The number seen in any field appears to increase in a remarkable manner the longer the field is examined.

In the lesions of the *skin* (1), (2) and (3) the above Gram-negative bacilli are present in large number. They are most numerous in the lesion of the skin over the great trochanter. In this lesion the number is very great in well-stained sections. The bacilli lie in the perivascular infiltration, in the walls of vessels in the infiltration, in the dermis outside the infiltration, and in the infiltrated subcutaneous lipomatous tissue.

Two Gram-positive diplococci were found in sections stained by Gram's method; an occasional diplococcus was found in the sections specially stained to demonstrate the Gram-negative bacilli.

In the *palate* (4) the Gram-negative bacilli are present in the granulation-tissue at a little distance beneath the ulcer, in the muscularis, and in the infiltration beneath the columnar epithelium.

Within and on the surface of the base of the ulcer are many Gram-positive bacilli, measuring about 1.5 to 3 micra in length by 0.7 micra in breadth, and Gram-positive round cocci and diplococci.

In the *lymphatic gland from the groin* (5) the Gram-negative bacilli are present. The great majority lies in the sinuses; others lie in the lymphatic clefts of the hilar tissue, in the walls of the sinuses and in the adenoid tissue immediately outside the sinuses.

In the *spleen* (6) the Gram-negative bacilli are present in the focal purulent areas and throughout the reticular strands of the pulp. In one section an example lies within a capillary vein.

There are also a very few Gram-positive and negative, round diplococci. One chain of three cocci was observed. The Gram-negative bacilli are much the most numerous organism.

In the *lung* (7) the Gram-negative bacilli are present in the walls of the bronchioles, in the organising exudate within bronchioles and peribronchial

alveoli, in pus within bronchioles, in the adventitia of pulmonary arterioles, in infiltrated peribronchial alveoli, in alveoli at a distance from bronchioles, and in the wall of a pulmonary vein.

In the pus within bronchioles there are also Gram-positive, round cocci, diplococci and short streptococci; large Gram-positive streptothrices, up to 1.4 micra in breadth; Gram-positive bacilli similar to those in the palate; Gram-negative cocci. Of these the Gram-positive streptococci and streptothrices are most numerous, the streptococci occasionally forming masses; the Gram-negative cocci are scanty and the Gram-positive bacilli very few in number.

No spirochaetes were found in the *Levaditi* sections of the skin and palate, though very numerous spirochaetes were stained deeply in the syphilitic liver employed as control. Organisms similar to the Gram-negative bacilli were stained by the Levaditi method.

SUMMARY AND DIAGNOSIS.

The sections of the skin show focal areas of acute, purulent and fibrino-purulent, occasionally hæmorrhagic peri-vascular inflammation of the dermis and subcutis.

The various cells which have been described as taking part in the infiltration are to be found in inflammations caused by all pyogenic organisms. In cytology, therefore, the lesions are not specific. Compared, however, with that of other purulent inflammations, the general picture is remarkable in the following respects: the prominence and severity of vascular, especially venous, affection, the strictly perivascular distribution of the inflammation, the association of conspicuous reaction of the fixed tissue with very great leucocytic infiltration, the striking amount of leucocytic karyorrhexis, and of phagocytosis (Fig. 5) of leucocytic fragments by free cells of the fixed tissues.

The lesions of the skin contain numerous Gram-negative bacilli, of very definite morphological character, and also an occasional Gram-positive diplococcus.

The gland from the groin, a gland which would drain the region of affected skin, is acutely inflamed, and contains the same bacilli.

The palate is ulcerated and is the seat of a chronic purulent inflammation. Throughout the inflamed palate are similar bacilli, whilst many other organisms lie in the base and on the surface of the ulcer.

In the lung are chronic, organising fibrino-purulent bronchiolitis

and peribronchiolitis; acute purulent bronchiolitis; fibrino-purulent and catarrhal peribronchiolitic pneumonia; slight, acute, serous, fibrinous, purulent, catarrhal and, occasionally, hæmorrhagic pneumonia at a distance from the bronchioles; great emphysema, doubtless secondary to the partial occlusion of the bronchioles by organised exudate.

The lung contains bacilli similar to those in the skin, and a variety of other organisms. The special bacilli lie for the most part deep in the granulation-tissue and connective tissue of the lung, the other organisms in the air cavities.

The spleen is a "septic spleen," containing numerous, minute, focal purulent areas. In these areas and in the remainder of the organ are many of the bacilli; there are also a very few cocci probably streptococci.

The condition of the spleen proves that at the time of death the patient was suffering from a bacteraemia and pyæmia. This bacteraemia was mixed. The essential bacteria were the Gram-negative bacilli, but these were combined with a very few Gram-positive cocci. In the skin the focal and peri-vascular nature of the inflammation, the necrosis of the walls of small vessels and the distribution of the organisms permit little doubt that the infection was embolic by the blood-stream. Here, again, the bacilli were associated with cocci, but the number of bacilli was in very great preponderance.

There can be no doubt that the patient at the time of death suffered from a bacteraemia, due to the Gram-negative bacilli associated with a few cocci.

The lesions in the lung were in part at any rate caused by the same bacilli. So far as can be judged from the sections, the infection of the lung was by inhalation from the palate. Whether the infection of the palate was embolic or not the histology does not indicate. The distribution of the bacilli in the gland in the groin points to the infection having been lymphogenous, from the skin-lesions of the abdomen and gluteal region.

The lesion in the *portion of skin removed on March 18th, 1918* (S.D. 301, 1918) (*vide* p. 42), is exactly similar in character to the skin-lesions removed after death, save that necrosis of vessels and hæmorrhage are greater than in the severest lesion of the skin (great

trochanter) removed after death. In the examination in March I only found one Gram-positive bacillus in a section stained by the Weigert-Gram method, and one bacillus in a section stained in Twort's mixture. In fresh sections stained for twelve or more hours in carbol-thionin-blue I have now succeeded in finding Gram-negative bacilli similar to those in the material obtained after death.

The lesion in this portion of skin was caused by the same bacillus, and has the characters of a hæmatogenous, embolic infection.

From the histological examinations, therefore, there can be little, if any, doubt that the patient was suffering from a bacteriæmia not only at the time of death on September 26th, 1918, but on March 18th, 1918.

Although a few cocci accompanied the Gram-negative bacilli in the bacteriæmia, there can be no doubt that the lesions were due essentially to the Gram-negative bacilli. From the description given above (p. 50) the resemblance of these bacilli to *Bacilli mallei* is obvious. Prof. William Bulloch kindly undertook to stain some sections and give his opinion upon the organism. Employing polychrome methylene-blue, differentiated with Unna's glycerine-ether mixture, he demonstrated a very large number of the bacilli in sections from the skin over the great trochanter. In his opinion the morphological characters of the bacilli and their general appearance in the sections were identical with those of the *Bacillus mallei* in lesions proved to be caused by glanders.

Prof. Bulloch gave me for comparison a stained section of lesions in the muscle of the leg from a case of proven human glanders. These lesions showed, somewhat more prominently, the features which I have enumerated, in the commencement of the summary, as characteristics of the inflammation in the skin: prominence of vascular affection, association of conspicuous reaction of the fixed tissue with very great leucocytic infiltration, a striking amount of leucocytic karyorrhexis and of phagocytosis. In regard to the reaction of the fixed tissue, it is important to make it clear that in the sections of the skin, and in Prof. Bulloch's section, the reaction on the part of the fixed tissues was essentially a formation of free mononuclear cells. There was certainly a proliferation of spindle fibroblasts, but a formation of fibrous tissue was not observed.

The lesions were focal, acute, purulent infiltrations associated with conspicuous cellular proliferation on the part of the fixed tissues. They were much more akin to abscesses than to chronic granulomata caused by ordinary pyogenic organisms, and they bore no resemblance to the granulomata of tuberculosis and syphilis.

Prof. Bulloch also gave me a section made by Dr. A. Whitfield of human glanders of the skin. The histology resembled closely that in the skin-lesions of the case under discussion.

In regard to the special histological features of the inflammatory foci in the skin, Mayer (2) quotes, without reference, Unna and Ehrlich as having described the following vascular changes in glanders: "The vessels widen, the endothelium swells, the intima in the veins and capillaries is for the most part lost, the lumen is filled with necrosed cell-bodies and fibrin; the muscularis, at first intact, is then infiltrated with leucocytes; the adventitia proliferates; nodules are formed round and close to the thrombosed veins; the nodules may form rings round the vessels." Fraenkel (1) lays stress upon the prominence of karyorrhexis: "Diese sich mit Kernfarbstoffen intensiv tingierenden Massen bilden etwas für die Rotzinfiltrate, an welchen Organen immer sie auftreten, Charakteristisches."

The lesions in the present case, therefore, have the histological characters of lesions proved to have been caused by the glanders bacillus; in these lesions are numerous bacilli which have morphological characters identical with those of glanders bacilli.

The clinical history is that of a subacute pyæmia of thirteen months' duration. Multiple lesions first appeared in the skin. Deep ulceration of the fauces followed six months later. The course of the disease thus bears a close resemblance to many cases of proven human glanders, as can be seen on reference to the sixty-one cases of Group A in the analyses made by Robins (3). In these sixty-one cases the nature of the infection was proven by isolation of the *Bacillus mallei*, or by animal inoculation.

The histological, bacteriological and clinical evidence, therefore, are all in favour of the case having been an example of human glanders.

It is regrettable that the nature of the infection was not proven by isolation of the bacillus or by animal inoculation. For this I am to blame. Had I had any experience of the histological changes caused

by the glanders bacillus, the changes in the portion of skin examined in March would have caused me to suspect glanders. More appropriate methods of staining would then have revealed the bacilli, and would have stimulated repeated bacteriological examinations of appropriate material.

CONCLUSION.

I have to thank Prof. Turnbull for finally discovering the nature of this case.

The histological changes, in all the lesions of the skin which were examined, were so similar and so definite in character that he considers a knowledge of them should go far towards the determination of the causal organism in a similar case. I feel it my duty to publish the case that other workers may have the benefit of his singularly careful and detailed investigations. The clinical characters of the case are also worthy of record.

The source of infection is still unknown. I have made inquiries from the patient's relatives, his doctor, and his veterinary surgeon; but can get no evidence of anything resembling glanders among his own or his neighbours' horses.

My thanks are due to Prof. Turnbull, Dr. Arkwright, Dr. Kilvert, Dr. Dobrashian and many others who have given me help in examination of the case.

The photographs of the ulceration of the cheek I owe to the kindness of Dr. Kilvert. The painting is by Miss Ethel Morton; the drawing of the microscopic preparation is by Mr. John R. Ford.

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EFFECT OF THE SUN'S LIGHT ON A SYPHILITIC ERUPTION.

PROF. C. RASCH,

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Copenhagen.

WHILE the effect of the sun on tuberculosis has greatly interested medical men, and has given rise to an extremely prolific literature, the same cannot be said to be the case as regards the relation between sunlight and syphilis. So far as I know no observations or investigations as to this relation exist, apart from some reports on the significance of the light in regard to the appearance of syphilitic leucoderma, and on the whole one knows nothing of how far sunlight has any bearing on the development of syphilis and its symptoms.

The following case seems to show that the sun's light, either by its own power or by the pigmentation it produces, can have a restraining effect on the symptoms brought about by the *Spirochæte pallida* in the skin.

On August 31st, 1920, a young girl, aged 19 years, with a very neglected syphilis of some months' duration, was admitted to the University Dermatological Clinic at the Rigshospital in Copenhagen. The symptoms were—Adenitis universalis; a macular and papular syphilide, excoriated papules on the genitalia, together with groups of papules on the soles of the feet, the forehead, the back of the neck and on the chin.

The macular and papular eruption, which had commenced about a month earlier, and had since gradually increased in severity and extent, was found to be spread over the greater part of the trunk, round the shoulders, on the upper arms and the thighs, but scarcely at all on the forearms and hands. On the back and chest it stopped at the border of that bared and pigmented portion of skin corresponding to the cut of the dress. Outside this line, and in its immediate vicinity, was found a dense outbreak of markedly in-



FIG. 1



FIG. 2.

TO ILLUSTRATE PROF. RASCH'S ARTICLE ON EFFECT OF THE SUN'S LIGHT ON A SYPHILITIC ERUPTION.

filtrated papules. Only some single smaller, more faintly coloured and less infiltrated papules overstepped, to a width of about 1 cm., the boundary of the pigmented portion of the skin, of which the entire remaining part was completely free from eruption.* No lesions were found on the deeply pigmented neck, but on the upper part of the back of the neck and on the forehead, both places being almost entirely covered with the patient's hair, groups of papules were again found. On the seborrhœic skin of the face groups of papules were found on the chin and below each corner of the mouth.

In the course of three weeks the eruption disappeared under a combined mercury-salvarsan treatment, and on September 20th a commencing leucodermia on the neck was observed for the first time. Examination of the eyes, the ears and the spinal fluid showed normal conditions, just as nothing abnormal could be found on the general medical examination of the patient.

To explain the unusually marked pigmentation of the chest and back, the patient (a dark blonde and grey-eyed) informed us that during the whole summer for two hours each day when the sun shone she, wearing a low-cut bodice, had to push her invalid mistress in a bath-chair about the garden.

When, as in this case, a papular syphilide is seen to respect portions of the skin, which otherwise this form of eruption generally covers completely, and when at the same time one sees that these same portions of the skin have been exposed to and influenced by the sun's light in an unusual degree, one cannot help thinking that it is this exposure to the light which has prevented the eruption from appearing on these parts. That here an effect of luminous or ultra-violet rays and not of heat-rays is in question is made probable by the experience that heat-rays often have just the opposite effect, inasmuch as they produce violent eruptions on the face, as is seen in the case of firemen and cooks. With this patient also the heat-rays seem to have had some effect, but on another part of the skin, as I imagine that her work in the kitchen may have had a developing effect on the large outbreak of papules round the mouth and on the chin. Possibly, however, the seborrhœic condition of the skin also has some significance here.

* See Figs. 1 and 2. The dark spot in front of the neck is a nævus surrounded by an achromic area.

Owing to our defective knowledge in this domain it is difficult to say in what way the light has been able to hinder the appearance of the syphilitic eruption. Various explanations present themselves. One can imagine either that the light has a deleterious effect on the spirochaetes, so that they are killed or weakened in virulence on the part exposed to the light, or one may suppose that the pigmentation produced by the light has in some way or other interfered with the activity of the microbes. It is, however, generally believed that the pigmentation weakens the activity of the microbes in the skin, although experimental investigations (Hanawa) are against this, and although the triangular pigmentations now so common on ladies' chests seem to establish a predisposition towards other affections of the skin, as first pointed out by Brocq, and according to my own observations in various cases. But the latter condition cannot, perhaps, be strictly compared with the effects on the skin of the spirochaetes acting from within, since in the majority of cases with Brocq's dermatitis it is a question of chemical or physical irritants acting from outside.

All said, the case described strongly suggests that at least in certain cases and under certain circumstances the sun's light has a hampering effect on the syphilitic processes in the skin. This report may, however, suggest and invite fresh clinical and experimental investigations of this condition.

If from this single case one were to conclude that the light must have some strong and permanent influence on the course of syphilis in general one would perhaps be mistaken. I, however, should consider it probable that at least some of the good results attained in the treatment of syphilitic patients at many watering-places (*e. g.* Aix, Challes, Dax, Bagnères-de-Luchon, Uriage, Arkansas Hot Springs, and Pjatigorsk), which enjoy strong sunshine, might be due to an effect of the sun's light.

ROYAL SOCIETY OF MEDICINE.

DERMATOLOGICAL SECTION.

MEETING held on October 21st, 1920, Dr. ARTHUR WHITFIELD, President of the Section, in the Chair.

Dr. A. CASTELLANI showed a case of *Delhi boil*. The patient was a young man, aged 26 years, who joined the army in 1915, and was sent to India, where he remained three years, most of the time near Delhi. He came back about six months ago, and a few weeks later he noticed some boils, as he called them, on his left forearm. He entered the hospital about five weeks ago for hepatitis; his liver was enlarged, with pain in that region, so much so that at first he was suspected to be a case of amœbic hepatitis. Scrapings from the nodules were microscopically examined, and numerous leishmanias found.

He was showing the patient, not because it was a rare case, but on account of the following rather interesting points: First, the clinical condition was not typical. There was a central, rather large, shallow ulcer, and several papules and small nodules around it. The microscopical examination of all these lesions showed the presence of leishmania, therefore they were of leishmanic origin. The second point was this: It was generally stated that cutaneous leishmaniasis was a localised disease, *i. e.* it did not cause general symptoms, but in this case—and he had seen others very similar—the organism had apparently given rise to a generalised infection, and to symptoms which pointed to internal disease. This man had had fever for some time, which he called malarial fever, and his liver was large, hard and painful, thus resembling kala-azar.

The PRESIDENT said he would like to hear how Dr. Castellani proposed to treat this case—with tartar emetic? Also, what was the maximum dose which he considered safe, given intravenously. He (the President) had a typical case of Baghdad boil on the ear, and he had been giving a good lot of tartar emetic, as he reacted only slowly, probably because of the feeble circulation in the ear. He was anxious not to overdose him. The most he had given as yet was 7 c.c. of 1 per cent. solution.

Dr. BARBER asked if Dr. Castellani used tartar emetic locally on the sores. He had four cases of Baghdad boil in the last year, and had used an ointment of 5 per cent. tartar emetic in vaseline and lanoline. At first it caused con-

siderable inflammation, but in each case the sores had healed up with that treatment alone.

Dr. CASTELLANI (in reply) said that his experience was that these cases, as a rule, stood tartar emetic very well indeed. Tartar emetic was less effective in cutaneous leishmaniasis than in kala-azar. He had seen cases of the latter cured in six weeks by it, but never Delhi boil cured so quickly. He started with $\frac{1}{2}$ gr. of tartar emetic, then increased it to 1 or 2 gr. A few weeks ago he had another case of Delhi boil, a lady, and tartar emetic did practically nothing. He then started treating her with emetin. This was not a new treatment: it had been used by him in Ceylon in 1914, and later it had been used in Egypt and Greece, with fairly good results. A few days after starting the emetin treatment the lesions quickly healed. If tartar emetic did not answer in this case, he proposed to use emetin subcutaneously in the neighbourhood of the sores. The treatment of cutaneous leishmaniasis by tartar emetic ointment originated with his friend Dr. G. C. Low some years ago, and he certainly obtained some good results. He (Dr. Castellani) gave it up because many of his patients complained of very severe pain. In three or four cases the lesions disappeared, but in one of them, after three months, and in another after six months, there was a relapse. He believed that cutaneous leishmaniasis, even in mild form, was not merely a localised condition, but that there was a general infection, and therefore he was inclined to prefer the intravenous use of the tartar emetic to the simple outward application of the drug.

Dr. E. G. GRAHAM LITTLE showed a case of *circumscribed deep induration following application of X-rays*. The patient was a lady, aged 56 years. She suffered from uterine fibroids, and a course of X-rays was given in the hope of reducing these. Eight exposures in all seemed to have been made, over the lower abdomen, and there were now four areas about the size of the palm of a man's hand in which a walnut pigmentation and a very slight degree of atrophy remained. The last exposure was made in March, and as the fibroids seemed unaltered an operation was performed in March last, the uterus and the growths being removed. The wound healed without incident, and the scar left by it was perfectly sound, and was separated from the present induration by a considerable area of healthy skin. About two months before she came to him a thickening of the skin was noted in one of the pigmented areas left by X-raying, on the left of the midline of the abdomen. There did not seem to have been any definite burn, and the surface of the skin covering the thickened mass was unaltered except that there was some puckering at the upper end. There was no papillomatosis. The thickened portion involved the whole thickness of the skin but was movable on the underlying tissues, and an area of about 3 in. by

4 in. was affected, extending nearly from the level of the umbilicus to the pubes, but well to the left of the midline. This indurated area was very hard, feeling like fibrous tissue. None of the other pigmented areas showed a similar change. He was entirely unfamiliar with this condition and should be glad of any suggestions.

Dr. E. G. GRAHAM LITTLE showed a case of *sarcoids of the Darier-Roussy type*. The patient was a lady, aged 55 years. Bluish deep-seated nodular swellings developed from time to time, the first to be noted having appeared on the lobes of both ears about twelve months ago, with rapid extension of similar growths on the eyebrows, face and neck. Three months later similar lesions came out on the knuckles of both hands, especially on the left, and to a slighter degree on the toes. The nodule was obviously hypodermic, and the skin was unchanged over it, except for the alteration in colour. The lesions were remarkably uniform in size, averaging $\frac{1}{2}$ in. in diameter, and were very numerous, some twenty being present on the face alone. There had never been any ulceration or indeed any change in the tumours once they had developed, except that some improvement, apparently temporary, was noted as following a course of "yadil."

The lesions upon the knuckles were strongly reminiscent of some of his cases of *Granuloma annulare*, except that they were uniformly reddened and the granular ring was lacking. But the case seemed to exhibit a sort of transition from sarcoids to *Granuloma annulare*, which Darier was now inclined to group with sarcoids. He had not been able to obtain any material for histological investigation.

Dr. J. H. SEQUEIRA showed a case of *Carcinoma cutis and pre-cancerous hyperkeratosis*. The patient, a woman, aged 64 years, originally came under his care with a characteristic rodent ulcer on the forehead. This was treated by radium, and responded very well at first. In the intervals between the radium applications, while she was under observation, she developed a rapidly swelling growth on the right upper arm. This was excised. Prof. Turnbull found it to be squamous carcinoma; he called it "a solid trabecular squamous-celled carcinoma." She had an enlarged gland in the axilla, and that was excised at the time, and proved to be purely inflammatory. The

patient had several other lesions of a curious character on the lower part of the back. They were of long standing, and much resembled the lesions which had been present in certain cases which had been shown there, and which were thought to be multiple rodent ulcer. On one of these patches, which was now covered with a red scale, there had developed during the last two or three weeks a papillomatous growth, which they feared was also squamous-celled carcinoma. A portion of the edge of one of these large reddish plaques on the back had been cut, and it did not show the characters of basal-cell carcinoma. The report they had was, that there was much hyperkeratosis and a suspicion of malignancy—*i.e.* it was looked upon as pre-carcinomatous—an opinion given some time before the development of these large, rapidly-growing papillomatous masses. The case was interesting as showing the multiplicity of malignant growths on the skin of two types—one apparently a basal-cell carcinoma, the other a squamous-cell carcinoma.

In her younger days the patient suffered from psoriasis; she had it thirty years, and was under treatment by medicine—presumably arsenic—and the question arose whether the old arsenical treatment had anything to do with the development of these tumours. So far as he could make out, there was no direct association of the lesions now present with the old psoriasis. They knew malignant disease had developed on old psoriatic patches, but he did not remember that malignant disease had developed on areas occupied by psoriasis which had been cured.

Dr. H. G. ADAMSON said that this was a very interesting case, and thought it was probably the first case of the kind shown in this country. He regarded it as pre-cancerous dermatosis of Bowen and Darier. Bowen first described the early patches, and predicted it was a pre-cancerous condition. Darier afterwards had a case in which a cancerous growth developed on the pre-cancerous patches. Darier took special interest in it because it was a dyskeratosis. In the patches there were downgrowths of the epithelium with keratosis in the centre, not unlike what was seen in *Molluscum contagiosum*. Darier compared it with Paget's disease, with the difference that in Paget's disease there was no hyperkeratosis, but the surface of the epidermis was eaten away, and the keratotic bodies came to the surface. In the pre-cancerous dermatitis of Bowen they were embedded deeper and were associated with hyperkeratosis. He did not understand the association with basal-celled carcinoma. He did not know whether Dr. Sequeira saw the sections of the original tumour. These downgrowths might be mistaken for basal-celled tumour. He would regard Dr.

Sequeira's case as in every way a typical example of Darier's cancer of the pre-cancerous dermatosis of Bowen.

Dr. GRAHAM LITTLE thought this case should be classed with those of generalised rodent, of which he showed the first case there. Mrs. Savill's followed almost immediately, and there was a third case shown by Dr. Gray. The history in this case of perfectly typical rodent ulcer having preceded all the other manifestations seemed conclusive of that diagnosis. The very recent lesions were exactly like the early stages of what was seen in the cases referred to. The first stage in this condition was a pearly-white, hardly visible swelling on the skin, of which this patient had one or two on the back. The history of previous psoriasis was very interesting: Dr. Gray's case that he had alluded to had such a history, and Mrs. Savill's case had a history of preceding severe seborrhœa. The eruption of rodent tumours apparently followed very much the distribution of the preceding rash. In two of his cases there was spontaneous involution: tumours were described as having been present, and there was an atrophic patch in the position they had been described as occupying.

The PRESIDENT thought that the first case of Bowen's condition observed in this country was one published by Sir Lenthal Cheate in his diagrams of malignant disease following certain nerve areas. Many years ago Sir Lenthal showed him a case which they both thought was Paget's disease, and followed the area of the nerve segment. They cut several pieces out, and examined them histologically, and they classed the condition as anomalous Paget's disease: they had not seen it in that position before. Those slides were shown to Mr. Shattock, who saw in some no reason to believe it was Paget's disease. Others he thought were Paget's disease. It had much of the peculiar cell formation which was there present, and it had some hyperkeratosis, and the peculiar gyrate scalloped edge. He thought Bowen's pre-cancerous dermatosis was an anomalous form of Paget's disease.

Dr. HALDIN DAVIS showed a case of *Pemphigus vegetans*. The patient, a somewhat elderly woman, had a long and rather indefinite history of sore throat, and a year ago she developed blisters in the mouth. During the last nine months she had been having lesions on the skin in the axilla, abdomen and back; nothing in the groin. The skin-lesions were rather small flaccid bullæ, which became sore, and then healed up. She had got pemphigus, but he might have to abandon the word "vegetans," because up to the present the bullæ had refused to vegetate. Nevertheless he regarded the prognosis in her case as poor.

Dr. GRAHAM LITTLE said he showed there two or three months ago a patient who for a year had had lesions on the mucosa of the mouth, and there only. During his early stay in hospital he showed very scanty pemphigoid bullæ. They developed rapidly, and he died last week of very extensive and intractable Pemphigus vegetans. He had had another case, in a man whom he brought there a year ago with an eruption on the hands, which members very diversely diagnosed, the prevailing view being that it was Lupus erythematosus. The

President was the only one who suggested the correct diagnosis—namely, that an arsenical factor was present. Dr. Willeox found arsenic in the hair and nails. Subsequently he was admitted into St. Mary's Hospital, and he was there when the pemphigoid eruption developed. It began on the characteristic parts, the groin and axillæ, and it became very fetid, and so the patient was sent to his home, where he died of extensive and typical pemphigus. Whether the arsenic content had anything to do with the subsequent development he could not say, but in both cases the end came extraordinarily rapidly when the skin began to be attacked.

Dr. J. J. PRINGLE was inclined to favour Dr. Haldin Davis's opinion that this case would ultimately become a Pemphigus vegetans. In one which he saw during the war the appearances when he first saw it were similar to those in this case. The patient was removed from a military hospital to the Middlesex, and rapidly got extremely ill, when, to everybody's surprise, he began to get well—the disease was apparently arrested. For eight months he was in such comparatively good health that he was able to resume military duty, in the capacity of a clerk. At the end of that time, however, he had a relapse, and the disease, which was quite intractable, proved rapidly fatal in three or four months. Dr. Pringle did not know whether this possibility of the remittent character of the disease had been pointed out.

Dr. WILFRID FOX said he had had a similar case, the patient being a woman, aged about 35, who recovered after some years. She was shown by him at the old Dermatological Society of London when she had partly recovered. She showed both bullæ and vegetating growths in the axillæ and groin; there were also numerous bullæ scattered about the surface of the body. The mouth was affected, being in a very septic condition, and diarrhœa and hæmorrhage pointed to some infection of the intestinal tract. He gave a bad prognosis, as up to that time most of the cases had died, but fortunately for the patient she eventually recovered, and shortly after the date in question several cases of a mild form of Pemphigus vegetans were reported from America in which recovery had taken place. Various drugs were tried, but the two most potent factors in bringing about a recovery were the removal of her teeth and the excellent nursing which she had. After she left the hospital she attended his out-patient department for several years, during which time a single vegetating growth between the toes, about the size of a cherry, kept recurring at intervals, but eventually cleared up altogether.

Mr. HALDIN DAVIS (in reply) said that a similar case had been published in the *Bulletin* of the Johns Hopkins University. That case lasted ten years, and the patient was still alive after several bad attacks of vegetating lesions, followed by remissions.

Dr. HALDIN DAVIS showed a case of *Pityriasis lichenoides chronica*. This boy, aged 11 years, was somewhat similar to a case he showed a few months ago as *Pityriasis lichenoides chronica* of the parapsoriasis type. The special point on account of which he was shown was the extreme youth of the patient. He had had it ever since he was three months old.

Dr. H. C. SEMON showed a case of *Lichen planus annularis*. The patient, a man, aged 52 years, was first seen by Dr. Malcolm Simpson, at St. Paul's Hospital, two years ago. There was a single papulo-circinate eruption about the size of a sixpence on the glans penis. Clinically, Dr. Simpson believed it to be a case of Lichen planus annularis, but in view of a definite history of primary chancre twenty-five years ago, and a weakly positive Wassermann reaction, he ordered the usual two months' course of mercury and novarsenobillon, and under this treatment the local condition slowly cleared up.

Six months ago the patient again consulted him for a recurrence *in situ*, but on this occasion the Wassermann reaction was negative. A difference of opinion led Dr. Simpson to send the case to him at the Great Northern Hospital. In his absence during the summer it was diagnosed as tinea and X-ray treatment was ordered, with the result that when the patient presented himself a week later on his return to the hospital involution had already begun and had become complete to-day.

Dr. H. C. SEMON showed a case of *Purpura annularis telangiectodes*. The patient came with a history of constantly recurring rheumatism, which began in 1914 when he enlisted. In 1915 he was discharged with aortic disease. For over six months he had had the lesions seen on the legs, annular purpuric petechiæ, with, here and there, small aneurysmal dilatations. He was unfamiliar with this eruption, but from the literature it seemed to correspond with a very rare condition known as *Purpura annularis telangiectodes*, which Majocchi described in 1898,* and of which, in 1915, only 38 cases had been described.

Dr. J. J. PRINGLE said he had ventured to make the diagnosis of "Majocchi's disease" in one case practically identical with that exhibited, the only differences being that it was more markedly reticular in pattern, and of a deeper purple colour. The patient was a very delicate woman, who had been grievously over-worked during the war. The disease was unilateral, involving the left leg and thigh only. He did not know whether she had morbus cordis. He suggested that she should be put to bed, and he afterwards heard that the condition completely disappeared in two or three months. He believed that was not in accordance with the prognosis given by Majocchi.

Dr. F. PARKES WEBER said that in 1910 he had described † the case of a man.

* *Arch. f. Derm. u. Syph.*, xliii and xlv, 1898.

† F. P. Weber, "Chronic Purpura of Two Years' Duration connected with Malignant Endocarditis, wrongly supposed to be connected with Splenic Anæmia," *Brit. Journ. Derm.*, Lond., 1910, xxii, p. 37.

aged 28 years, who had been in a number of hospitals, and when he saw him, late, he had Endocarditis maligna lenta, of which he died. Purpura on both legs was a feature of his illness, and the enlargement of the spleen was remarkable. For that reason many supposed he had splenic anæmia. The cardiac valvular disease in Dr. Semon's case made him think of that case.

Dr. H. C. SEMON showed a case of (?) *Mycosis fungoides*. This man, aged 36 years, was sent to him two months ago. For the past eight to ten years he had had a succession of tumours in various parts of the skin of the whole body. They ran a very definite course. About fourteen days after first appearing, ulceration commenced and lasted about a week, at the end of which time healing set in, and was complete in another fourteen days. Pain was absent. There was usually one to three months' interval between the crops, and his general health did not appear to be much affected. There was a seborrhœic eczema on both legs which had persisted on both ankles for eight years. In 1918, of three blood examinations for the Wassermann reaction two were positive and one negative.

Five injections of galyl and a course of mercury pills did not have any appreciable effect, either in preventing ulceration or delaying a succeeding tumour.

When seen by him two months ago, the whole of the left upper eyelid was occupied by a flat-topped ulcer, which at first glance closely resembled a Hunterian chancre. Absence of induration was marked, however, and there were no glands to be felt. Under the local application of boric ointment healing occurred within ten days, and all that was left of the condition to-day was a soft infiltration involving only the thin outer skin of the eyelid, and not at all hindering the closure or opening of the eye.

The associated "eczema" on the shins, and ankles, forearms, palms and sides of the neck was of the dry type, and appeared to have a softly infiltrated character not unlike the dermatitis he had seen in cases of obvious *Mycosis fungoides*. A clinical point against such a diagnosis was the absence of itching, which was well marked in the early stages of that grave malady.

He made a biopsy, which showed infiltration of the whole corium with ordinary round cells, and others of various types. At the present time the Wassermann was negative. The growth on the lid had not been subjected to microscopical examination, because if

there were subsequent interference with the action of the lid it might be attributed to the biopsy. A blood-count showed no abnormality.

Dr. H. W. BARBER showed a case of *leukæmia with cutaneous nodules*. Two months ago the patient appeared with an ulcer on the scalp, which at that time suggested the diagnosis of tertiary syphilis. He also had a bluish nodule on the left cheek, and some enlarged glands in the neck. He thought the nodule was probably a melanoma. He took him into hospital, and found his Wassermann was negative. He was given salvarsan, but this had no effect upon the ulcer. Blue nodules later appeared on the chest and elsewhere. When a blood-count was done he was found to have lymphatic leukæmia, with a total leucocyte count of nearly 400,000. The blood smears show that about 70 per cent. of the white cells were of a very primitive type, and the small lymphocytes were only 6 per cent. He had only seen three similar cases, but in all of them the leukæmia was of this type. The man had slight enlargement of spleen and liver, some ascites, and signs of pressure on the bronchi, presumably from enlarged bronchial glands.

Dr. J. L. BUNCH showed a case of *multiple idiopathic hæmorrhagic sarcoma*. The patient was an Englishman, aged 30 years, and worked in a glass-refining factory. Some lesions appeared on the dorsum of the right foot six to seven years ago, followed by similar lesions below the internal malleolus on the same side. Later similar lesions appeared on the dorsum of the left foot and on the left ankle. These lesions were first brownish, then purple, and then they became indurated. On the dorsum of the second and third toes of the left foot were some prominent, soft, purple, vascular growths, about the size of a pea. There was an indurated, larger, purple patch on the dorsum of the left foot, which had recently ulcerated, and the pain, which had always been considerable, was now much accentuated. The patient was shown there two years ago by Dr. Pringle, but at that time there was no ulceration.

He was of opinion that the best chance they could offer the man was to have the part thoroughly X-rayed. Not only did he think that it would cure the ulcer, but that it would remove much of the induration of the nodules on his toes.

Dr. PRINGLE said that the report of the Sub-committee which examined this case in 1918 and a similar one in 1919 had been published in full, and on the whole it bore out his provisional diagnosis of "the *miscalled* hæmorrhagic sarcoma" of Kaposi. The progress of the case now shown undoubtedly confirmed the opinion he then formed of it, and it was worth while to accentuate the fact he used at the time as a clinical argument against the diagnosis of "Schamberg's disease"—viz. that this was a condition which did not extend by progressive vascular extension at the margin, but by discreet, outlying, completely separated vascular growths, quite outside the main body of the disease. It was, however, mainly on the ground of the microscopical examination of these vascular growths made by Dr. MacCormac that the Sub-Committee confirmed his provisional diagnosis of "the *miscalled* multiple sarcoma"* in both cases.

Dr. E. G. GRAHAM LITTLE showed a case of *Parakeratosis variegata*. The patient was a young girl, aged 20 years. The history given was that at the age of five she had an attack of measles, the eruption so diagnosed passing insensibly into the condition now seen. This history of acute onset, suggesting an exanthem in the first phase of eruption, was exactly paralleled by a previous case of parakeratosis reported by him there, also in a young girl.

At the present time the whole surface of the skin, of the hands, forearms, feet and thighs was covered by a lichenoid, finely scaly, very red eruption in continuous sheet-like invasion, ceasing somewhat abruptly on the limbs at the upper margins. The skin of the back was also faintly involved, being, however, much less pink, although showing the fine scaliness. The cheeks were smooth, but covered with telangiectases. The nails were unaltered. The mucosæ of mouth and vulva were free. The breath was very foul, and the teeth were in an execrable condition. Otherwise she seemed perfectly healthy and robust. She had undergone many treatments, without the slightest benefit.

Dr. LESLIE ROBERTS (Liverpool) said that he regarded the case as one of great interest as illustrating the effects of environment on a congenitally defective epidermis. The vice of cornification was not merely confined to the arms; if the pale "non-eruptive" parts were examined with a lens they showed the abnormal formation of the cuticle. This was defective both in keratin and hyaline matter. The telangiectatic feature he regarded as due to the action of light and air on the endothelium of the capillaries. This effect was most marked

* See *Proc. Roy. Soc. Med.*, July, 1918 (Sect. Derm.), pp. 107 *et seq.*, with illustrations, and May, 1919, with Report of Pathological Sub-committee; also *Brit. Journ. Derm.*, 1918, xxx, p. 179, and *ibid.*, 1919, xxxi, p. 143 *et seq.*

on the cheeks, on the neck, and the front of the chest corresponding to the V-shaped opening of the dress. Examination of the patient's mother showed an abnormality of cuticle similar to the daughter's, but very slightly developed.

Dr. GEORGE PERNET showed a case of *Post-vaccinal psoriasis*. The patient was a girl, aged 16 years, who was vaccinated in two places just below the insertion of the left deltoid four months ago: this was a primary vaccination, as she had not been vaccinated in infancy. Two months later, while the scabs were still present on the vaccinated areas, the present psoriasis outbreak appeared. Round the two recently scarred vaccination areas, each $\frac{3}{4}$ in. in diameter, there were two concentric rings of scaly psoriasis papules, one immediately round the borders of the scars, and one a little farther out. The latter rings had coalesced, forming a transverse figure of eight. The extensor surfaces of the forearms and hands exhibited profuse psoriasis more or less *en nappe*. The elbows were also involved, and on the fronts of the knees a few discrete typical small nummular lesions were present. At the time of the vaccination process all the finger tips festered, but this had cleared up. Both the girl and her mother asserted there had never been any trace of a rash before the vaccination.

Dr. S. E. DORE said that psoriasis sometimes occurred for the first time after slight injuries, and it was possible that this might explain its occurrence after vaccination.

Dr. WILFRID FOX said he had seen a similar thing in a medical man practising in Ceylon, who had been revaccinated on account of an outbreak of smallpox. He had never had psoriasis before, but after the vaccination psoriasis started around the points of inoculation, spread down the arm and eventually all over the body. It was so intractable that he had to give up practice and come home.

Note by Dr. PERNET.—The psoriasis appeared first on the left forearm and only subsequently above the vaccination areas.

Dr. S. E. DORE showed a *case for diagnosis*. This girl was seen for the first time two days ago, and it had not been possible to watch the evolution of the lesions or the results of treatment. She had had an eruption of small, closely aggregated follicular papules about the size of a pin's head, leaving small scars with a few pustules on the forehead, cheeks and chin for nine months. Its onset was preceded by flushing of the face for about three months and there were some symptoms of rosacea at the present time. On pressure under a glass the lesions showed definite brown points similar to the deposit seen in *Lupus vulgaris*, and the exhibitor's view had been that the condition

was allied to the acnitis of Barthelemy, Radcliffe-Crookers' Acne agminata, or the disseminated follicular lupus of Tilbury Fox which Dr. Oliver and others had shown to be distinct from the tuberculides. Dr. Pringle, however, claimed it to be an instance of the eruption he described under the name of "a rare seborrhoïde of the face," and the characters of the eruption and the associated symptoms of rosacea appeared to confirm this diagnosis.

Dr. PRINGLE regarded the case as a good example of a comparatively mild form of the condition he described in the *British Journal of Dermatology*,* under the title of "a peculiar seborrhoïde." The paper was accompanied by a coloured illustration of a severe case, and a schematic drawing of the microscopical appearances. Although his name had thus been associated with the condition he disclaimed the honour of having first observed it, or of having first identified it as a clinical entity. For Dr. Colcott Fox had brought a well-marked case before the old Dermatological Society of London as far back as 1894,† and a case published many years ago by Prof. Petrini (at Galatz) had been regarded in some quarters as an exaggerated form of the disease, which had been recognised by many recent American writers. Almost all cases of this peculiar form of sebaceous disorder affecting the face had a history of antecedent dyspepsia and rosacea, and its characters became much more manifest when the rosaceous element had been removed by treatment. The primary lesions were slightly elevated reddish or slightly shiny papules, and the microscopic findings by Dr. Graham Little in Dr. Pringle's first case, which showed dense and deep cellular infiltration round the pilo-sebaceous apparatus, explained the appearance of brownish lupoid-looking nodules in the skin on diascopy, which often gave rise to erroneous diagnosis. They also accounted for the shallow pitting or atrophy of the skin which followed the absorption of the infiltrate, but which was only temporary. It was to be noted that these elementary lesions were present in greater or less abundance in nearly every form of sebaceous disease of the face, especially of acne on a rosaceous basis; it was only in exceptional cases like the present, on which the peculiar primary lesion was present in super-abundance or almost exclusively, that the clinical type was to be recognised. The first step towards a cure was the removal of dyspepsia and rosacea, and the rest of the disease was almost invariably rapidly cured by a weak sulphur-resorcin paste.

Dr. S. E. DORE showed a *case for diagnosis*. This child, aged 9 years, has an eruption on the face, arms and legs, which has been present in an acute form for six months with slight attacks in the summer for five years previously. She was handed over to him as a case of staphylococcic infection, and a few weeks ago the arms and

* *Brit. Journ. Derm.*, 1903, xv, p. 41 *et seq.*

† *Ibid.*, 1894, vi, p. 368.

legs were covered with pustules. Now, as a result of antiseptic applications, it has been reduced to its present form. The initial lesion is a deep vesicle, which becomes pustular and left a small pitted scar. The eruption was mainly on the exposed parts, and was definitely affected by sun and heat, particularly heat. He regarded it as an example of *Hydroa aestivale*. She was being treated with quinine ointment and quinine powder, according to Darier's prescription, with a view to intercepting the chemical rays of the sun, but the condition could not be entirely attributed to ultra-violet rays because it was, like most of the cases, excited by heat and by cold winds. One area of the leg was treated by ultra-violent rays, and instead of being aggravated the eruption had decidedly improved.

The PRESIDENT considered most of these cases of solar eczema to be due to some focal sepsis, and cases similar to this he had not classified as *Hydroa aestivale*. One patient had it until she was aged sixteen. She was admitted into hospital, the septic tonsils and adenoids were cleared out, and she was well for two years; she had never had such a period of freedom before. At the end of the two years some teeth became septic, and in extracting them more were taken out at a sitting than she could properly stand, and then the rash came out again. It had now practically disappeared. It was rare to find solar eczemas in infants. If it was a peculiar condition innate in the skin it ought to be congenital, but in the majority of cases it was not so.

Dr. SEMON asked if Dr. Dore had examined the urine spectroscopically for hæmatoporphyrinuria. It was said that a large number of cases of *Hydroa aestivale* had that condition, and it had been produced in rabbits in the inverse way, *i. e.* they had been fed on something which gave them hæmatoporphyrinuria, and exposure to light caused them to develop these lesions. As a matter of fact it killed mice. He had examined the urine in these cases, but hæmatoporphyrin had not been found.

Dr. DORE (in reply) said he had not examined the urine, but was familiar with the observations mentioned by Dr. Semon, and would have it tested for hæmatoporphyrin.* There were no other children in the family similarly affected. In his experience these cases and those of solar eczema were very difficult to deal with, as complete protection from sun and heat was almost impracticable.

* McCall Anderson, *Brit. Journ. Derm.*, January, 1898, p. 1, described two cases of *Hydroa aestivale* in brothers in whom the urine was of a Burgundy-red colour during the attacks owing to the presence of hæmatoporphyrin.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

ARTHROPATHIES OCCURRING IN SCLERODERMIA. CH. ADRIAN and J. ROEDERER. (*Ann. de Derm. et de Syph.*, 1920, ser. 6, 1, pp. 299-319, 341-359, 395-424.)

BASED on three cases of their own, one of which ended fatally, the authors have made a careful study of the joint lesions which have been described in association with scleroderma during the last sixty years. They divide them into three groups: (1) In which the affection of the joints is primary, and is succeeded by scleroderma; (2) in which joints and skin are affected simultaneously; (3) in which the skin is affected first, and subsequently the joints become affected. Joint lesions in scleroderma are almost entirely confined to the female sex. In character they greatly resemble those of polyarticular chronic rheumatism or certain anomalous forms of tubercle; they in no way resemble those of arthritis deformans. They appear to originate in the synovial membrane, and only affect the bones and cartilages secondarily. These become the seat of rarefying changes which lead to atrophy. The small joints of the hands and feet are those most often affected; after that the knees. The affection is always of insidious onset. As regards the aetiology of the condition nothing whatever is known. There are two theories equally unsupported by any real evidence—the theory of nervous origin and the theory of infection. The prognosis is good in mild cases. It is more serious, if not really bad, in cases where the joints are progressively affected one after another. No successful treatment is known. A good bibliography is appended.

H. D.

CONTRIBUTION TO THE STUDY OF THE ÆTIOLOGY OF XANTHOMA MULTIPLEX. F. S. BURNS. (*Arch. of Derm. and Syph.*, 1920, ii, p. 415.)

IN this contribution is described an advanced case of Xanthoma multiplex in a woman, aged 27 years. There were five different types of lesion: (1) Palpebral lesions, pinkish yellow in colour like pieces of chamois leather implanted in the skin; (2) nodules around the joints, which were firm in consistence, salmon pink, freely movable, and tended to be lobulated; (3) plane nodules, soft in texture, salmon pink, with well-defined borders; (4) plaques, the largest of which were situated over the buttocks; (5) hard tumours, occurring over the bones and seemingly attached to them, covered by normal skin, and shown by the X-rays to be made up of soft tissues.

A chemical examination of the tissues for cholesterol revealed it in large quantities in the nodules. The blood also was examined from time to time, and the cholesterol content was found to be considerably increased under normal mixed diet, under low fat diet, and especially under high fat diet.

From the findings the writer considered it probable that Xanthoma multiplex was a dermatosis whose origin lay in the increased amount of cholesterol in the blood, the skin-lesions of which were caused by its deposition in the tissue, where it induced a peculiar secondary connective-tissue hyperplasia.

J. M. H. M.

PARASITES.

CULTIVATION OF EPIDERMOPHYTON INGUINALE. D. L.

FARLEY. (*Arch. of Derm. and Syph.*, 1920, ii, p. 466.)

IN this contribution the author recommends the following technique for the cultivation of the *Epidermophyton inguinale*:

Before the scrapings are taken the skin is cleansed with 95 per cent. alcohol and allowed to dry. The knife used in obtaining scales and the black paper into which the scrapings are received should be sterile and a large amount of material should be collected. The material is planted soon after collection, as it has been found that more positive cultures are obtained with fresh material than after it has been allowed to dry for several days.

The medium is melted, cooled to 45° C., and allowed to run slowly from a pipette into a Petri dish, so that an area of hardened medium is formed in the centre of the dish with a zone free from medium around it. This prevents secondary contamination from creeping in from the edges, such as is liable to happen when the entire floor of the dish is covered. When the medium is sufficiently hardened the dish is inverted, the lid removed, and the half containing the medium carefully placed on a sterile glass plate. Melted paraffin is painted round the contact circle of the plate and the Petri dish, thus sealing the chamber. Before planting, these modified Petri dishes are allowed to incubate at room temperature for a few days to ensure their sterility.

Three varieties of media have proved useful in the culture of the epidermophyton, namely, Sabouraud's proof agar; blood Sabouraud's medium—human blood which has been heated to 55° C. for thirty minutes and added to Sabouraud's proof agar in the proportion of from 3 to 5 per cent.; gentian-violet blood maltose agar, a similar medium to the above with the addition of 1:500,000 of gentian-violet, which would appear to have a restraining effect on Gram-positive bacterial contaminations.

J. M. H. M.

THE DANISH TREATMENT OF SCABIES. SVEND LOMHOLT. (*Lancet*, 1920, excix, p. 1251.)

THE writer says: This treatment has proved a great advance. It is absolutely reliable, rapid, comfortable and cheap. One single innunction suffices; after 24 hours the scabies is cured, and relapses are never seen.

Prof. Ehlers in 1811 first adopted the formula composed by Mr. Marcussen, a chemist attached to the same city hospital in Copenhagen. After a warm bath the patient's whole body, except the head, is lightly rubbed with the ointment until every part is covered. After waiting a quarter of an hour to allow the ointment to soak into the skin, the patient goes to bed. Twenty-four hours later he takes a second bath, puts on fresh clothing, and the cure is complete. Lomholt records that 678 men in the Danish navy were treated by this method without a single recurrence. Two patients only suffered from dermatitis, due to the ointment having been badly prepared. The making of the unguent is not simple and requires care and practice. It is as follows:

(1) 1 kgrm. of sublimated sulphur is dissolved at a gentle heat in 2 kgrm. of a 50 per cent. solution of potassium hydroxide. This makes a clear yellow solution.

(2) 225 grm. of vaseline and 225 grm. of water-free lanoline are carefully mixed without heating.

(3) To this mixture 375 grm. of the solution of sulphur in potash-lye mentioned above is added.

(4) Fresh zinc hydroxide is prepared by mixing 28 grm. ZnSO_4 and 40 grm. 20 per cent. sodium hydroxide, and this is afterwards added to the ointment.

(5) Liquid paraffin is added to obtain a total weight of 1000 grm.

(6) 5 grm. of benzaldehyde is added to check the somewhat disagreeable smell of sulphuretted hydrogen.

The activity of the ointment depends upon the liberation of sulphuretted hydrogen when in contact with the skin. The unpleasant odour of this gas is the only drawback to this treatment. In a few hours it decreases to its minimum. Sulphuretted hydrogen discolours copper and silver articles.

This method of cure does not necessitate confinement to bed or the house.

R. P. W.

NEW GROWTHS.

LYMPHO-GRANULOMATOSIS OF THE SKIN IN HODGKIN'S DISEASE. HOWARD FOX. (*Arch. of Derm. and Syph.*, 1920, ii, p. 578.)

THE cutaneous manifestations of Hodgkin's disease may be divided into two classes, namely, a group of manifestations which are not characteristic of the disease either clinically or histologically, such as prurigo-like eruptions, urticaria, bullous eruptions, and exfoliative dermatitis, and a characteristic cutaneous manifestation represented by tumour-like infiltrations with a typical histological structure and analogous to those seen in lymphatic leukaemia.

In this contribution a case of Hodgkin's disease, presenting tumour-like infiltrations, is described in a man aged 30 years. The cutaneous lesions were confined to the face and scalp, and involved practically the whole of the scalp, half of the right side of the forehead, and both temporal regions. They consisted of diffuse painless infiltrations involving the skin and subcutaneous tissue. The surface of the lesions was dry, shiny, and dull purplish in colour. A histological examination of a piece of affected tissue presented a picture somewhat like that of mycosis, consisting of an infiltration of darkly-stained uniform cells resembling lymphocytes arranged in dense groups around the blood-vessels. In addition, a few epithelioid cells were shown and a large number of dividing binucleated cells. There were no plasma-cells or giant-cells.

The clinical diagnosis of the case was made on the strength of a rather slight enlargement of most of the palpable lymph-glands, a well-marked enlargement of the spleen, a mild anaemia but otherwise normal blood-count, occasional fever, dyspnoea, and some asthenia. It was established by a microscopical examination of an excised gland.

J. M. H. M.

LYMPHATIC LEUKÆMIA WITH PRIMARY MANIFESTATIONS OF THE SKIN. JOHN BUTLER. (*Arch. of Derm. and Syph.*, 1920, ii, p. 594.)

THE case on which this paper is based was a woman, aged 35 years, whose body was covered with innumerable tumours, which were livid red in tint, and had the

general appearance of the lesions which have been described from time to time in connection with leukaemia. On the face their presence produced a leonine facies suggesting leprosy, while on the feet they had a patchy appearance, and in colour recalled lesions of Kaposi's hemorrhagic sarcoma.

The blood-count was that of lymphatic leukaemia. Histological examination of a tumour showed a dense infiltration of cells of a lymphatic type in the deeper parts of the corium and subcutaneous tissue. These cells were arranged in large nests or cords separated by dense fibrous connective tissue.

Two interesting points in connection with the case were, first that the skin-infiltrations developed before the blood-count became abnormal, and it was only when the case was well advanced that the blood became characteristic; and second, that in the infiltration a considerable number of cells showed the presence of mitotic figures, including cell-multiplication, and pointing to a local proliferation of the tumours with the formation of cells *in situ* rather than in the bone-marrow, and deposited in the skin by the blood.

J. M. H. M.

PATHOLOGY.

PROTEIN SENSITISATION IN THE PRODUCTION OF SKIN-DISEASE. HARVEY P. TOWLE. (*Arch. of Derm. and Syph.*, 1920, ii, p. 531.)

THE subject of protein sensitisation has attracted considerable attention in America, and an extensive literature has now grown up around it. In this paper the causes of it are considered, its relationship with heredity, gastro-intestinal disease, liver disturbances, etc., discussed, the theories of anaphylaxis expounded, and the cutaneous food test described.

J. M. H. M.

PROTEIN SENSITISATION IN SKIN-DISEASES: URTICARIA AND ITS ALLIES. WALTER J. HIGHMAN and JEFFREY C. MICHAEL. (*Arch. of Derm. and Syph.*, 1920, ii, p. 544.)

ACCORDING to the writers, urticaria and the allied conditions may be regarded, with certain possible exceptions, as anaphylactic manifestations, the sensitisation occurring mainly through an anatomically or functionally deranged intestine. This sensitisation can be demonstrated by local reactions, which, when positive, indicate sensitisation.

The proteins employed in carrying out these tests are both of vegetable and animal origin. The procedure is as follows: The skin is cleansed with ether, and minute bloodless excoriations are produced at a number of points along the forearm, a drop of decinormal sodium hydrate solution is deposited on each excoriator, and a small quantity of the protein is rubbed in, with a fresh wooden applicator for each substance tried. Controls are also made with the alkali alone. The reaction appears in from ten to thirty minutes as a wheal on an erythematous base. If the wheal equals the control lesion and presents no erythema it is negative; if it is larger and associated with marked erythema it is positive.

J. M. H. M.

TREATMENT.

TREATMENT OF CUTANEOUS ERYSIPELAS WITH BRILLIANT GREEN. JOSEPH E. ADAMS. (*Brit. Med. Journ.*, November 20th, 1920, p. 779.)

THE writer, having tried magnesium sulphate in watery concentrated solution, glycerin, glycerin and ichthyol, picric acid in methylated spirit, iodine in rectified spirit, and an aqueous solution of brilliant green in the treatment of erysipelas, comes to the conclusion that brilliant green applied in a 5 per cent. aqueous solution once or twice a day produces the best results. In a dozen cases so treated the average time for subsidence of the attack was just over five days. The staining produced by this preparation did not prove an insuperable objection.

With regard to the penetrating power of picric acid, iodine and brilliant green. Prof. Dudgeon prepared sections from portions removed within two hours of the application of these three substances, and demonstrated the granules deposited among the deeper cells of the Malpighian layer. They appeared to be more numerous in the case of brilliant green than with either picric acid or iodine, but as the sections were unstained it was possible that these granules were more readily seen.

S. E. D.

PRELIMINARY NOTE ON THE TREATMENT OF NODULAR LEPROSY BY INTRAVENOUS INJECTIONS OF CHAULMOOGRA OIL. P. HARPER. (*Journ. Trop. Med. and Hyg.*, 1920, xxiii, p. 285.)

THE mixture used was the following:

R Iodine	1 gr.
Ether	500 m
Ol. chaulmoogra	500 m

The iodine was added to sterilise the solution.

Large veins, such as the external jugular and the median basilic, were chosen for the injection, because in big veins the fluid was diluted more quickly by the blood. On the first two or three days 10 minims of the mixture was injected, and later this was increased to 20 minims daily. The injection was given quickly for the first 5 minims and then more slowly, the 20 minims being injected in about three minutes.

The author has given hundreds of these intravenous doses of chaulmoogra oil and ether, and has had no trouble with fat emboli and his patients have gained weight under the treatment.

J. M. H. M.

REVIEWS.

DISEASES OF THE SKIN.*

IN this sumptuous volume Dr. MacLeod has garnered the fruits of many years of work in hospital and laboratory. He has dedicated it to his colleagues in dermatology, and I am sure that they with one accord will regard it as shedding lustre upon their branch of the medical profession. In the aim he set before himself of furnishing "a practical guide to the symptomatology, pathogenesis and treatment of skin-diseases" he has been eminently successful. This volume is the most luminous and most comprehensive text-book on dermatology ever published in these islands. It runs to rather more than 1300 large pages, royal octavo; but no book could lie less open to the charge of undue expansiveness. Having examined it with considerable care, I can testify that if, as an old editorial hand, I had been asked by any purblind publisher to "cut it down," I should have flung down the blue pencil in despair. The treatment alike of the more important and of the less important subjects is never less than thorough and never more than sufficient. From beginning to end there is no paragraph which is either redundant or diffuse. Had the author not been economical of space he might, indeed, have written an even more extensive work. As he himself explains, he has had to omit much that is of interest in connection with the history of the various diseases, and has had to restrict the bibliographies. Since this is a text-book and not a mere manual, possibly when it goes into a second edition, as in due time it certainly will, he may consider it desirable to deal somewhat less scantily with the literature of the subject.

The book is divided into two parts—general and special. The eight chapters of Part I are occupied with the anatomy and physiology of the skin, with the general aspects of symptomatology, pathology, aetiology and bacteriology, diagnosis, and treatment, and finally, with nomenclature and classification. All alike are admirable in their conciseness, lucidity and sound judgment. In discoursing upon the principles of treatment he emphasises the importance of rest in dermatitis. The rest, he insists, must be not only physical but mental, and not only mental but moral—rest from worry and anxiety; and, further, there must be *rest from excessive treatment*. There speaks the wise physician. Nothing is more certain than that the over-treatment of cutaneous diseases is, as he says, a common error, which may aggravate a psoriasis into an exfoliative dermatitis and transform scabies into a sulphur dermatitis. In the aetiological chapter he suggests—and rightly, I think—that the factor of auto-intoxication has been somewhat exaggerated. Against the abuse of soap and water he administers a salutary warning, as leading to deleterious changes in the skin and even to the production of dermatitis. That it is responsible for many cases of infantile eczema and may convert a quiescent cutaneous affection into a dermatitis no experienced dermatologist will dispute. But he is careful to add that insufficient cleanliness is equally harmful; and while it is well to remind medical men and nurses that even soap and water must be used with discretion, for some centuries to come it is the other side of the shield that will have to be presented to the public at large. This even holding of the balance between

* *Diseases of the Skin: A Text-book for Students and Practitioners.* By J. M. H. MACLEOD, M.A.St. And., M.D.Aberd., F.R.C.P.Lond. Royal Soc. Pp. 1307 + xx. 23 illustrations in colour and 435 in black and white. London: H. K. Lewis & Co., Ltd. £3 10s. net.

opposing views characterises every part of the book. Always the writer's attitude is that of a judge rather than of an advocate, and whenever the materials for arriving at a definite conclusion are wanting the fact is candidly recognised.

In Part II, in which the cutaneous affections are considered individually, it is not quite easy at first sight, owing to some want of consistency in the headlines, both as they appear in the text and as they are given in the contents list, to grasp the principle upon which the groups of diseases due to micro-organisms have been arranged. Chapter XV, which is concerned with the streptococcal affections, is headed, "Diseases of the Skin due to Vegetable Parasites," and this forms the running headline of the chapter. But it is not continued in Chapter XVI, which deals with staphylococcal diseases, nor in Chapters XVII and XVIII, occupied respectively with the dermatomycoses and with the bacillary affections—tuberculosis, leprosy and rhinoscleroma. In the contents list Chapter XIX is headed "Cutaneous Affections due to Protozoa," though it deals with but one protozoal disease—syphilis (the others being reserved for the chapter on tropical diseases in another part of the book), and as the title of Chapter XX in the contents list is "Cutaneous Affections due to Animal Parasites," it might be conjectured that the protozoal chapter belongs to the section on vegetable parasites. In the text, however, Chapter XIX is headed "Diseases Due to Animal Parasites," so clearly that is not so. The hasty reader might wonder whether, under the influence of the tricky sprite that presides over the "chapter of accidents," something had gone wrong with the order of the chapters; but a more careful scrutiny will discover that Chapters XV to XVIII are intended to be governed by the headline, "Diseases of the Skin due to Vegetable Parasites," although it does not appear at all in the contents list, and that the coccal are not immediately followed by the bacillary affections because Dr. MacLeod regards the causal organisms of the latter as streptotriches. All this is a mere matter of bookmaking technique, and is of no substantial importance; but the author will not, I am sure, think me captious if I express the hope that when the time comes to revise the book he may think it worth while to give a little more attention to what our American friends call "captions." Whether it was desirable for him to depart voluntarily from his ætiological classification by placing tropical diseases in a chapter by themselves at the end of the book instead of distributing them according to their origin I am a little doubtful, though there is no doubt something to be said for the departure as practically convenient.

Dr. MacLeod's accomplishments in pathology and histology have enabled him to make an admirable disposition of the neoplasms. They form two chapters, one consisting of the benign, the other of the malignant growths, and in both they are arranged according as they arise in the epidermis, the epidermal appendages, the corium, or the blood-vessels and lymphatics. Certain affections which are sometimes regarded as belonging to this group—xanthoma, scleroderma, Sclerema neonatorum, Œdema neonatorum, and Calcareous deposits—are considered in a separate chapter as "pseudo-neoplasms."

The chapter on "Syphilis" is a triumph of lucid, well-ordered exposition. No one who has ever attempted a presentation of this protean subject will fail to appreciate the skill with which it is here set forth. Dr. MacLeod has broken with the old tradition of pouring the multifarious phenomena of the disease into the mould of primary, secondary and tertiary stages, but he classifies the

syphilides as early, intermediary and late, though with the caution that this division also is arbitrary. He has done well to deal very fully with the primary sore, describing under five headings the different varieties of hard chancre, showing in detail how their aspect is affected by the situation in which they arise, and giving not less attention to extra-genital than to genital chancres. What is said under prognosis is excellent. He declares that in every case, if only treatment is begun early enough and is thorough enough, there is "reasonable expectation of cure," and aptly points out that with modern methods of treatment the prognosis depends more upon the general state of health and the habits of the individual patient than upon the syphilis itself.

Other subjects in which there is an exceptionally dexterous marshalling of the facts are those of leprosy and eczema. In descanting upon the treatment of leprosy the author recognises the failure of all the vaunted remedies to stand the test of protracted trial, while cherishing the hope that an absolute cure may some day be discovered. Of eczema he remarks that it is practically impossible to find for it a definition which is sufficiently comprehensive. His own definition is that of "an inflammatory affection of the skin, characterised at first by erythema, papules or vesicles, and later by scaly, weeping or crusted patches associated with itching or burning," and it is in this comprehensive sense that he proceeds to treat the subject.

In discussing the ætiology of pellagra he impartially presents the various theories, and indicates a slight leaning to the infective theory. As to the alleged relation between herpes zoster and varicella, he thinks it most probable that the reported cases were mere coincidences. Possibly that is so, but they appear to be sufficiently numerous to make further investigation desirable.

One of the best features of the book is the attention everywhere bestowed upon treatment. One is particularly struck with the detailed treatment provided for affections which, though comparatively trivial, have a considerable incidence, expose the patient to great discomfort, and are not easily amenable to remedies. Thus chilblain, which is summarily dismissed in many books on dermatology, occupies six pages of the chapter on "Affections due to Cold," and at least a dozen formulæ are given. In the chapter on "Affections due to Heat," the convention which allocates burns and scalds to the province of general surgery is disregarded, and nine pages are devoted to them. It was natural that, having made a study of this subject, Dr. MacLeod should give it a place in his textbook. But since it is only in burns of the higher degrees that structures lying deeper than the corium are destroyed or damaged, there is ample warrant for annexing this subject to dermatology, and I have little doubt that in future other writers will follow his lead. He has also included burns from electricity and lightning.

Of omissions I have noticed but two: there is no description of *Ulcus molle*, which is referred to only in the diagnosis of hard chancre, and while other micro-organisms are carefully described, the tubercle bacillus is ignored, and the reader is left to discover from a line in a table of classification that the author ranks it as a streptothrix. From errors of the positive kind the book is exceptionally free. The only ones I have observed are "Colle's law" for Colles' (or as I prefer it, Colles's) law, the assignment of the appointment of the Royal Commission on Venereal Diseases to the year 1914 instead of to 1913, and an occasional wrong termination in the names of drugs in a few of the formulæ.

In the carefully compiled index, under the entry "*Frambœsia tropica*," the *Treponema pallidum*, which has enough else to answer for, is saddled with the responsibility for that disease.

The illustrations, with which the book is lavishly furnished, are as happy in selection as they are admirable in execution. The histological and pathological figures from drawings by the author are eminently elucidatory, and with the clinical figures and the illustrations of micro-organisms form a collection of almost unrivalled excellence. Paper and print are of the best, and I warmly congratulate the publishers as well as the author upon a work which from every point of view is a most valuable addition to the literature of dermatology. That it is destined to take rank as a medical classic is the safest of prophecies.

MALCOLM MORRIS.

ELECTRIC IONIZATION: A PRACTICAL INTRODUCTION TO ITS USE IN MEDICINE AND SURGERY.*

THE essential facts of ionic conveyance are first clearly and concisely set out, and then follows a very helpful chapter descriptive of the equipment required for ionisation and of the solutions most commonly in use. In dealing with the clinical effects of the introduction of ions into the body for various diseased conditions the author strikes us as being unduly optimistic. This, however, is a fault (or a virtue) apt to be engendered, we should imagine, in pupils of Prof. Leduc, in one of whose writings, if we remember rightly, occurs the description of a patient treated by him for severe scoliosis due to pleural thickening and adhesions, and cured of his scoliosis (and presumably therefore of his pleural adhesions) by a single dose of ionisation! The effects on the tissues of different ions in common use, but chiefly those of the zinc ion, and the method of application of this ion to suppurative and ulcerative conditions are plainly set forth. Indeed, this little book will be found useful not so much in informing the student of the results which may be reasonably expected from ionisation as in helping the practitioner to apply the treatment.

The print is excellent and the diagrams simple and clearly executed.

BOOKS RECEIVED.

Syphilis and its Treatment, with Especial Reference to Syphilis of the Skin. By WILFRID S. FOX, M.A., M.D. Pp. viii + 195. 53 Illustrations, including 14 Coloured Plates. Royal 8vo. London: H. K. LEWIS & Co. LTD., 1920. Price 36s. net.

A Morphéa e Curavel! By DR. J. J. VIEIRA, FILLIO. Rio de Janeiro: JACINTHO RIBEIRO DOS SANTOS, 1918.

Scurvy, Past and Present. By ALFRED F. HESS, M.D. Pp. 279. Philadelphia and London: J. B. LIPPINCOTT Co., 1920. Price 18s. net.

Syphilis and Venereal Diseases. By C. F. MARSHALL, M.D., M.Sc., F.R.C.S., and E. G. FRENCH, M.D., Ch.B., F.R.C.S.Ed. Demy 8vo. Pp. xii + 434. 7 Coloured Plates and 99 Illustrations. London: BAILLIÈRE, TINDALL & COX, 1921. Price 25s. net.

* *Electric Ionization: A Practical Introduction to its Use in Medicine and Surgery.* By A. R. FRIEL, M.A., M.D.Dub., F.R.C.S.I. Demy, 8 vo. Pp. 76. 25 figs. Bristol: John Wright & Sons, Ltd. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. Cloth, 8s.; paper cover, 6s.

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ON CREEPING DISEASE.

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A. INTRODUCTION.

A CLINICALLY distinct case of creeping disease was found in the Dermatological Department at the Aichi Medical College in February, 1918. The writer of this thesis could extricate an animacule alive at the end of the lesion. The worm was confirmed to be a species of the *Gnathostoma*. Now there are very few species of *Gnathostoma*, and they are seldom found. In Japan only two cases have been recorded by Yoshida* at Osaka. They were found in the stomachs of pigs.

Moreover the only *Gnathostomas* ever found in the human body are four cases recorded from Siam, viz. *Gnathostoma siamense*, and in these cases the parasites did not cause any creeping disease but only made a small knot in some part of the human skin.

Under these circumstances the *Gnathostoma* found is in itself a zoological rarity. Besides, we have never heard of any case of creeping disease caused by a *Gnathostoma* in the whole range of dermatological history. Accordingly I resolved to make a study of my case and publish the result.

Now there have been no less than forty-three reports of creeping disease, but cases in which the causative creature has been extricated

* Yoshida, *Text-book of Parasites of Domestic Animals*.

are only six in all. In all these six cases the *Gastrophilus* larva has been thought to be the causative parasite.

Dohi in Tokyo was the first who discovered the parasite in the sections of the lesion (1911). The next was Knowles in America (1916). The latter asserted without any foundation that the creature found in the sections was a *Gastrophilus* larva. As to the pathological and anatomical reports of the disease they are very few, and these few agree that the path taken by the creature is in the epidermis. In Dohi's case, however, it was found for the first time in the corium, so that it is now absurd to assume that the parasite of creeping disease always travels in the epidermis, although it did so in many cases. In my case, on the other hand, the tunnel made by the parasite is partly in the epidermis and partly between the epidermis and corium. The floor of the latter part consists of the upper stratum of the corium and its roof of the epidermis. From the histological standpoint my case may rank midway between Dohi's case and the other ones. Such a middle type has never occurred in the whole history of creeping disease. Cases of creeping disease show various peculiarities in their symptoms, so that it would be better to classify them according to their characteristics. What is common in them is that they form a linear lesion in the human skin extending day by day. I will describe first my own case, then attempt a classification of the different types by a review of the literature, and by this means prove that my case is clinically an unmistakable case of creeping disease. Lastly I will discuss the histology and aetiology of the disease.

B. HISTORY AND SKIN SYMPTOMS.

The patient, S. O—, is a woman, aged 41 years. Her husband is a trader; her three sons are in good health. She was born at Yawatacho, Korigami-Gori, Gifu-Prefecture, living the last ten years mostly in China, has a moderately good constitution and nutrition, neither smokes nor drinks, had the measles when very young. Ten years ago she went to China and lived in Tientsin, afterwards moving to Hankow (1913); during her stay in China she returned to her native place, Gifu, every year about June, to avoid the heat and improve the health.

Previous diseases.—Ten years ago she gave birth to a boy and since

June of that year her health has been impaired. According to the examination made at a certain hospital in Hankow, she had pleurisy (Pleuritis exsudativa) with effusion in the right chest and also some complaint of the kidney and bladder. So she returned home in September of the same year and did her best to restore her health. After some time she seemed almost cured and went back to China. Since June or July, 1917, however, she has had various complaints, so that she returned home again, and her trouble was diagnosed at a certain private hospital at Kyoto as cystitis. She remained in that hospital about three months but made no great improvement. Accordingly, on November 6th, 1917, she visited the Gynaecological Department of the Aichi Prefectural Hospital and her disease was diagnosed as endometritis. On January 21st, 1918, the case was transferred to the Internal Disease Department under Dr. Hatta of the same institution and was diagnosed as renal tuberculosis and cystitis. According to her statement made at the time, the patient had experienced since last May frequency of micturition, pain in the right abdomen, pain in the urethra after micturition, and turbidness of the urine. The chief complaint had been frequency of micturition. No derangement was perceived in the lungs, heart, liver and spleen, except a slight tension in the abdomen and pain in the right side. The urine-test showed the presence of protein.

Present disease.—On the evening of February 11th she suddenly felt on the right chest a swelling which was reddening. From that time she was conscious of intermittent pricking pain in the lesion. The patient is said to have wondered if it was not an eruption of furuncle.

Condition of February 12th, about 4 p.m.—She asked that her pricking papule be examined. Accordingly on February 12th, about 4 p.m., I examined the lesion for the first time. When her chest was disclosed, what attracted my attention on the surface of her pallid skin was a singular, narrow, hook-like line of vesicles of yellowish white on the right side of her chest. What may be considered the starting-point of the line showed only slight elevation, and just above it there was a place shot with reddish brown. Half-way along the line the bordering skin was pink, but the farther from the line the fainter was the hue.

Course of the line.—The line started at a point between the axillary

line and the anterior axillary line, about 5 cm. below the axilla, and extended as a line of vesicles in the direction of the front of the chest. It took its course a little obliquely upwards and forwards, and proceeding about 2·5 cm. curved downwards and forwards, then



FIG. 1.—February 12th, about 4 p.m. 4·5 cm. long, 1–2 mm. wide, 1 mm. high.

turning backwards and downwards bent backwards and upwards. The extreme end, viz. the end which turned backwards and upwards, was more slender than the rest. Its extremity was pointed and of deep red.

According to the patient the intermittent pricking pain never ceased and was especially violent during the night. Feeling for the seat of the pain I located it in the deep-red extremity. Although I thought it to be a creeping disease, I refrained from giving any treatment to the lesion in order to watch its progress, only administering some harmless internal medicine.

Condition on February 13th, about 11 a.m.—Although the line of vesicles remained the same as the day before, the original deep-red extremity was not to be seen. On the other hand, from the portion



FIG. 2.—February 13th, about 11 a.m.

that ran backwards and downwards a new line, 0·5 cm. long, had branched off, almost parallel to the former advancing end. Also from the end of the portion that ran a little obliquely upwards and forwards, another new line, 1 cm. long, had branched off in the direction of the front of the chest, and its extremity was deep red like the former one. This fact seemed to show that the causative parasite



FIG. 3.—February, 13th, 2·38 p.m.

which had occupied the older extremity on the day before went backward and made the aforesaid 0·5 cm. branch, and, going still farther back, took this new course. The two new branches were

each about 1-2 mm. wide. They were thin serpiginous lines of vesicles of yellowish white with little or no reddening in the borders.

Condition on February 13th, 2.38 p.m.—When I examined the line of vesicles in the afternoon at 2.38 I found that another very thin, new red line about 5 mm. long and 1 mm. wide had branched off backwards and downwards at a point a little before the extreme end of the last vesicular line seen in the morning. According to the patient the pricking pain had not abated. A photograph was taken



FIG. 4.—Creeping disease (author's case).

of the lesion at about 3 p.m. (Fig. 4). About 4 p.m. a wax model was made. By that time I saw that the branching point had become thick and grown into a vesicle of yellowish white.

February 14th, 10 a.m.—According to my observations on February 14th, about 10 a.m., there was no change in its length, but the beginning part of the older line had become reddish brown and flattened to the length of 1 cm. or more, so that it looked like a scratch. The last thin, deep-red line had changed into a line of vesicles of yellowish white, and through the branching point of the last line I could distinguish a thin, short, thread-like thing of deep

red. Whereupon after careful disinfection I tore the elevation with a needle at a point a little further off (neither causing pain nor bleeding), and reaching the object I extracted it. It was nothing but the causa-



FIG. 5.—February 14th, 10 a.m.

tive parasite. The inside of the elevation was full of sticky fluid. The parasite was 9 mm. long and 1 mm. wide. Its colour was about

the same as when I saw it first through the elevation, viz. blood-red. I put it in human serum and saw it make active, wave-like movements, which, however, ceased about half an hour later. The patient said that previous to the extraction, since the night of the 13th, the pricking pain had almost disappeared.

Condition on February 15th.—No change in the length of the line. The beginning part of the line had deepened its reddish brown and the general height of vesicles was reduced, and the reddening in its borders had faded a great deal.

Excision of the lesion on February 16th, 11.30 a.m.—I excised the entire lesion. At that time the tension of the vesicles had much lessened, the reddish brown part had increased to half the length of

the entire line and its colour had deepened; the reddening in the borders had become light brown.

Rate of extension.—February 12th, about 4 p.m., 4.5 cm.; February 13th, 2.38 p.m., 8.7 cm.; viz. 4.2 cm. in 22 hours 38 minutes.

C. HISTOPATHOLOGY.

I excised the whole lesion without the slightest damage under the local novocain anæsthesia. The excised piece was pinned at the four corners with the subcutaneous adipose tissue downwards on a thin wooden board and was put in 50 per cent. alcohol, the alcohol being gradually strengthened. I cut it into seven small pieces at right angles to the main line, and from each piece prepared paraffin serial sections. Each section was 10 microns in thickness. From 350 to 400 of such thin sections were made serially from each small piece. The greater part of these sections were stained with hæmatoxylin-eosin, one in every forty with van Gieson, Weigert's elastic stain, carbol-methyl-green-pyronin and the other few with polychrome methylene-blue, mucicarmine, triacid, Jeuner's stain and panchron. A general survey of all these sections with a weak magnifying glass shows hollows corresponding to the line clinically observed, and by connecting these hollows one could construct a tunnel. The roof of the tunnel throughout the sections is made of the horny layer, and the floor consists partly of epidermis and partly of corium. I venture to call the former the epidermis tunnel and the latter the epidermis-corium tunnel. The corium cropping out in the tunnel floor occurs in the middle of the transection of the floor, and occupies about one-third of the entire breadth of it—1.2 mm. on the average. Each third on either side is epidermis, which contains in perfection the basal layer, stratum germinativum and stratum granulosum. The opposite ends of the epidermis on right and left are cut obtusely or sharply at right angles to the basal layer. It is noteworthy that in the central one-third the lost epidermis seems to have been digested in the parasite's stomach, and throughout the sections no fragments of the epidermis are to be perceived in and about the tunnel. In the transition places between the epidermis tunnel and the epidermis-corium tunnel the corium is exposed to the tunnel through very narrow (0.03 mm.) interruptions of the epidermis.

Let me illustrate the relations between the epidermis part and that of the epidermis-corium through the entire tunnel in the following picture :

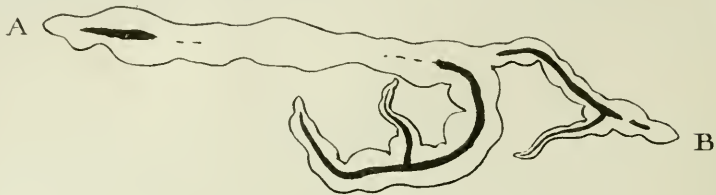


FIG. 6.

The thick black lines represent the cropping out of the corium in the epidermis-corium tunnel and the thin black lines show the interruptions or crevices of the epidermis. The rest is the epidermis tunnel. The starting-point of the tunnel (A) is an epidermis tunnel 290 microns in length, then follows an epidermis-corium tunnel of 1400 microns, and between these two there are interruptions of epidermis 80 microns long. The fore-half of the main line is the epidermis tunnel, and towards either end there are interruptions of the epidermis each 40 microns in length, where the corium has cropped out in the tunnel. The extremity of the second branch (B) is an epidermis tunnel of 580 microns; then follows an epidermis-corium tunnel of 160 microns; next comes an epidermis tunnel of 200 microns; and again we have an epidermis-corium tunnel measuring 1740 microns. In the third branch only the extreme end, 10 microns long, is of epidermis, all the rest being of epidermis-corium. The tail end of the main line and the extending end of the first branch make epidermis tunnels of a few microns. A minute observation of each section with a strong magnifying glass shows that the roof of the tunnel consists of the horny layer and a row of keratohyalin cells beneath it. In these cells, though the boundaries of each cell are obscure, the nuclei are clearly coloured and flat in shape. The horny layer is not interrupted. The floor of the epidermis tunnel is made of the stratum granulosum, stratum germinativum, and basal layer. The stratum granulosum makes a flat plane towards the inside of the tunnel. The uppermost nuclei of thin stratum are flat and the granules in the cells are fewer near the centre of the floor, but either side, where it touches the roof of the tunnel, no such decrease takes place. The stratum germinativum has become remarkably thick,

PLATE I.



FIG. 1.—Section of tunnel in the epidermis.

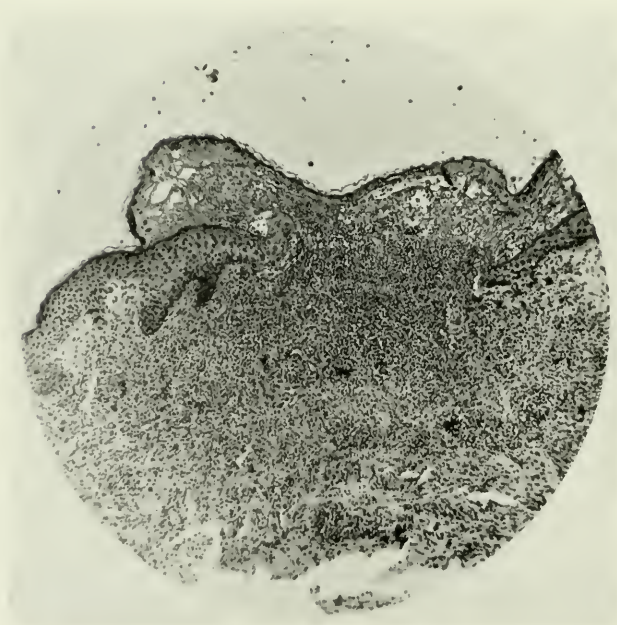


FIG. 2.—Section of tunnel in the epidermis-corium.

TO ILLUSTRATE PROF. TAMURA'S ARTICLE ON CREEPING DISEASE.

each cell swollen, intercellular spaces enlarged, and in consequence the arrangement of the nuclei is sparse. These changes are more marked in the middle of the floor and less clear near its sides.

In the basal cells no changes are to be perceived. In the intercellular spaces of the epidermis one sees many wandering multinucleate leucocytes and eosinophile cells. The corium which makes the tunnel floor is of papillary layer. Here the infiltration of round-cells is strong and the elastic fibres are sparse. Almost all the infiltrated cells are eosinophile cells, and most of them have nuclei split into two. Besides there are a few plasma-cells and fewer mast-cells. These infiltrated cells and the cells in the tunnels are in contact without any clear boundaries. Where the papillary layer is exposed to the inside of the tunnel through the narrow interruptions in the epidermis a number of thin fibrils run in parallel lines towards the inside of the tunnel, and passing through the crevices they diverge. There are also eosinophile cells in the crevices. In the interior of the tunnel, especially in the neighbourhood of the crevices, we see crowds of unaffected eosinophile cells. No hæmorrhagic lesions can be perceived in the papillary layer.

The contents of the tunnel.—The tunnel contains the following bodies: Fibrin; a great number of eosinophile cells; a few multinucleate leucocytes; a great number of particles, polygonal, oval, or round, which are well stained, like nuclei, with hæmatoxylin; crowds of very minute granules stained very lightly with eosin; a great number of round particles of various sizes, stained more intensely with eosin, but not as intensely as the ordinary red blood-corpuscles, the larger of these particles being very little different from red blood-corpuscles. These bodies co-exist promiscuously and their proportions are not always the same. In a few sections particles like nuclei well stained with hæmatoxylin form round or elliptical groups. The animalcule I extricated alive out of the tunnel was blood-red coloured, which suggests that its digestive tube was filled with the blood of its host. If so, the particles like transformed red blood-corpuscles in the tunnel may be considered those red blood-corpuscles that have passed through the intestinal tube of the creature. At the same time the particles well stained with hæmatoxylin also may safely be taken as those epithelial cells or white blood-corpuscles which have appeared in the shape of the excretion of the creature.

The deep portion of the corium.—In all the sections the cellular infiltration is found in the papillary layer. There are infiltrations of round-cells around the blood-vessels, sebaceous glands and sweat-glands, almost all of them consisting of eosinophile cells.

D. ZOOLOGICAL DESCRIPTION.

My *Gnathostoma*, when alive, was about 9 mm. long and 1 mm. wide, the colour blood-red and slightly transparent. Under the magnifying glass I could perceive its alimentary canal clearly. The tail end was very much curved and the head end was slowly expanding and contracting. Being put at once in human serum it made active wavy movements, but in half an hour it had gradually lost its activity. It was then kept in alcohol. In the latter state its colour is whitish and the body cylindrical, the fore half being broad and the hind half a little narrower. The tail end is curled spirally towards the ventral side. On the head end there is a disc 0.42 mm. long and 0.15 mm. wide, which is separated from the main body by a distinct constriction. On its surface, thick, strongly curved hooks 0.02 mm. long are arranged in eight rows. In front of this part there are two lips 0.075 mm. long and 0.14 mm. wide. The lip is elliptical in shape with a papilla on each lateral anterior margin, and a swelling on the median portion near the front border of the lateral surface.

The cuticular covering of the body is thin in the fore part, somewhat thicker towards the tail, and thickest at the very tail end, showing a construction like that of the bursa copulatrix. In the fore half of the body the cuticular covering is covered closely by a kind of scales. They grow more densely in the anterior two-thirds of the fore half and almost cover the whole surface. These are 0.28 mm. long; the proximal end at which they are attached to the body is narrow, while the distal end is broad with three teeth. In the remaining one-third of the fore half of the body the scales become more and more sparse and different in shape, scales with three teeth being replaced by those with only one tooth. In the hind half there are no scales, the surface being smooth.

The tail shows cuticular thickening and forms a bursa copulatrix, though very primitive, in which there are four pairs of comparatively large papillæ. The two pairs are post-anal and somewhat large; the

PLATE II.



FIG. 1.—The gnathostoma of creeping disease sketched from life.



FIG. 2.—Head region. *l.* lip; *p.* papilla; *h.* hook; *s.* scales of body.

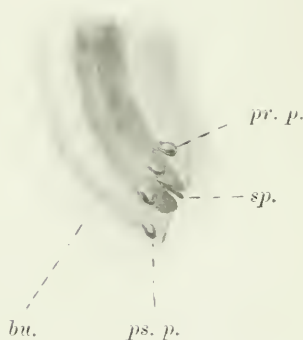


FIG. 3.—Side view of the posterior end of the body. *sp.* spicula; *pr. p.* proanal papillae; *ps. p.* postanal papillae; *bu.* bursa copulatrix.

a. *b.*

FIG. 4.—*a.*, hook of head. *b.*, trident scale on the anterior portion of the body.

other two are pre-anal and rather small. There are two spiculæ, unequal in length and well chitinised. Though the outer genital organs clearly show that the worm is male, the testicular tubule is not developed at all.

The *Gnathostoma* belongs to the Family Gnathostomidæ, one of the seven families of the Nematoda. This family is characterised by the chitinous scales which cover the whole or a part of the surface of the body. In this point the family is distinctly separated from the other six families. The present family has only one genus, that of the *Gnathostoma* (*Cheiracanthus*), and has very few species compared with the other families of the Nematoda. The following are the species of this genus and their hosts that have hitherto been recorded:

Species.	Host.
<i>Gnathostoma hispidum</i> , Fedtschenco . . .	<i>Sus scrofa</i>
„ <i>gracilis</i> , Diesing . . .	<i>Vastres curieri</i>
„ <i>horridum</i> , Leidy . . .	<i>Alligator missipianus</i>
„ <i>spinigerum</i> , Swen . . .	<i>Felis catus</i>
„ <i>socialis</i> , Leidy . . .	<i>Ectoporus ruteola</i>
„ <i>turtida</i> , . . .	<i>Didelphys</i>
„ <i>shipleys</i> , . . .	?
„ <i>paronai</i> , . . .	<i>Mus</i>
„ <i>spinuosissimum</i> , Shipley & Hornel. ?	
„ <i>siamense</i> . . .	<i>Homo</i>

All the above-mentioned species except the last one, the *Gnathostoma siamense*, live in the host's stomach.

The *Gnathostoma* is not only few in species but also few in the number of individuals. In Japan there are only two records of it having been found in the stomach of the swine.

The *Gnathostoma* found in the present case is a male and agrees in general to the *Gnathostoma siamense* described by Leiper, but the great difference is that the former caused a linear eruption in the human skin.*

E. A REVIEW OF THE LITERATURE AND CLASSIFICATION.

(1) This disease was reported for the first time in 1874 by an English doctor, R. J. Lee.† It occurred in a child. A pale rose-pink line about $\frac{1}{8}$ to $\frac{1}{2}$ in. in breadth was perceived over the angle up to the abdomen. In some places it

* Leiper, *Parasitology*, ii, 1907, pp. 77-80.

† *Clin. Soc. Trans. Lond.*, 1875, viii, p. 44. -

made a dotted line. As it developed it took a circuitous route and looped on itself. It sometimes travelled a distance of as much as $4\frac{1}{2}$ in. in twenty-four hours. No desquamation on the line. A piece of skin was excised at the extreme end and with that the disease stopped. Dickinson, Fox and Duckworth investigated the tissue, but they failed to find the parasite and the burrow.

(2) After ten years Lee* reported a second case. The patient in this case was a male adult. He had a small, flat pimple as large as a pin's head on the skin. From this spot started a line, first straight and then turning in various directions. Being flat it could not be perceived by touch. It was lined on either side by hyperæmic borders $\frac{1}{4}$ in. wide. The fresh portion was red, while the older ones were fading and becoming narrower. For more than a year, when the patient died of heart disease, the line never ceased its progression. It advanced sometimes no less than 4 in. a day. In the two instances reported by the originator of the name of "creeping disease" the description amounted to this—that there was a red line travelling over the skin, without elevation, running now straight, now circuitously, in some places making a dotted line. In neither case was there any description about the parasite, nor did he mention there being any tunnel in the tissues. For the present I will call these two first cases the "erythematous form of creeping disease."

(3) In 1892,† at the Second Dermatological Meeting in Vienna, Crocker published a third case. It occurred in a two-year-old girl. The lesion at first consisted of a very small red spot about the size of a pin's head. It travelled about ten times the breadth of the thumb a day, leaving behind a red line several centimetres long. He considered it as a disease caused by a parasite either in the epidermis or beneath it. He excised a piece of skin which had red dots and made a minute investigation, but could not find the parasite. Though the little girl had two such lines, their nature was not ascertained. This case was described more minutely in Crocker's *Atlas of Skin-Diseases*. According to this book, besides the red line in the lower part of her body a second line appeared on the head, vanishing after a short time. While the latter caused no trouble, the former as it travelled gave rise to itching so severe that her sleep was interrupted. Her general health was affected, bowels became irregular, and the faeces were offensive and blood-coloured. The progress of the red line was about 4 in. by night and about 1 in. by day, but sometimes covered a distance of as much as 10 in. in sixteen hours. The second line on the left side of the neck measured 3 in. and it remained visible for a few days. Four months later another red line made its appearance on the left side of the chest, so that there was a serpiginous line on either side of the chest. After three months and a-half spent in the hospital she returned home, but she did not get rid of the disease till a few months later, when a red line extending from the chin to the ear caused a discharge in the latter place and led to the final disappearance of the line. Taken altogether, the supposed larva had been travelling in the skin of the child for a matter of two years and three months.

* *Clin. Soc. Trans. Lond.*, 1884, xvii, p. 75; cited in Mracek, *Handbuch der Dermatologie*. Bd. iv, 2, p. 1179.

† *Ann. de Derm.*, t. iii, p. 1184.

(4) The fourth instance is that recorded by Neumann* in 1895. This was the first case in Austria. The patient was a two-year-old girl. One line ran over the sacral region to the back and neck and came down to the chest and abdomen. The other line extended from the genitals to the left leg. The line on the chest, back and the outer side of the thigh was very distinct and extremely long, from $\frac{1}{2}$ to 1 mm. in width and bright red in colour. This line neither branched nor broke, running sometimes straight, sometimes circuitously, and was in many places crooked and serpiginous. It was also raised about 5 mm. from the general surface of the skin. As a subjective symptom there was an itching sensation, but not very much pain. It occurred in the night and the line progressed at the same time, so that the parasite seemed to move chiefly during the night. The route taken by the supposed larva was bright red and elevated, but in a short time the colour faded and the elevation was reduced. One could plainly distinguish the advancing part from the earlier one because of the redness and elevation of the former and the rusty-brown colour of the latter. I may call this Neumann's case "the erythematopapular form of creeping disease." The description then given by Neumann was wholly clinical; the supposed parasite was not found; there was no anatomical observation. On such clinical evidence alone one could not decide whether this case was an example of exactly the same disease as that reported in England, but at the German Dermatological Congress in Graz, November 23rd, 1895,† Pringle, who had seen Crocker's case, said that Neumann's was the same.

If Neumann's case and Crocker's had been of the same nature as Pringle is said to have asserted, I ought to have classified Crocker's case also in the erythematopapular form, but as I find in the original report of Crocker no description about the line being papular, his case must have been what I may call the erythematous form.

(5) The fifth case is that reported by Samson‡ in Russia in 1897 as a new kind of dermatological disease. In this case a slightly raised red line as thin as thread grew on the face and hand accompanied by severe itching pain. The progress of the line was often as much as 15 cm. in twenty-four hours. Samson found an animalcule in the excised piece of the lesion, and after microscopical investigation said that the parasite corresponded to the picture of the *Gastrophilus* larva in Brehn's *Tier-Leben*, but that he was unable to decide to what genus it belonged. Samson's case was introduced by Prof. Petersen as an additional instance of the same disease at the meeting where Neumann's case was discussed. Since then every scholar reporting about creeping disease has invariably quoted Samson. I will call Samson's case the "papular form of creeping disease." According to Samson, though he found the parasite only once, cases of this kind were not rare in Russia, inasmuch as he himself treated nine cases in three years. Crocker also said that he often found such disease in Africa, though not reported.

* *Wien. klin. Wochens.*, 1895, p. 221; *Arch. f. Derm. u. Syph.*, xxxiv, 1896, p. 105; *Wien. klin. Wochens.*, 1898, p. 423; cited in Mracek, *Handbuch der Derm.*, Bd. iv, 2, p. 181.

† *Arch. f. Derm. u. Syph.*, 1896, Bd. xxxiv, p. 105.

‡ *Ibid.*, 1897, Bd. xli, p. 367.

(6) Sokolow's case:*. Sokolow made a report when he read Samson's case. He said that he saw a case of that kind as early as in his school days (1879). Since 1881 he had seen two or three cases every summer. The disease came mostly on the face, but sometimes on the neck or arm. It began with something like a small fissure made by a pin-prick. The line proceeded straight at first but curved by-and-by. In a week the earlier part of the line had become a scarcely perceptible rose-coloured ring. Seven years before he had already extricated from the extremity of a line a larva looking like that of a fly, he said. (He showed its picture.)

(7) Kuscher's two cases in Russia:† In both cases there was a line slightly elevated and making a net-like development. At the end there was a small dark spot. They belonged to what I call the papular form.

(8) Malcolm Morris's two cases:‡ The fourth report in England. In one of them a red line appeared in the gluteal region and progressed from 3 to 4 in. a day.

(9) Ehrmann's case, the second report in Austria:§ On January 17th, 1897, at the Vienna Dermatological Society, Ehrmann reported a patient who had a reddened eruption on the left shoulder-blade. It caused itching pain, exuded serum and formed a scab over it. Afterwards its borders were raised like beading and appeared somewhat like cerebral convolutions. It proceeded at high speed, moving about half a centimetre in an hour. The earlier part flattened and left pigmentation. It differed from Neumann's case in having blisters. I will classify Ehrmann's case in the erythemato-papulo-vesicular form.

(10) Kumborg's case in Russia:|| It was reported as a case of *Dermato-myiasis migrans asteosa* in 1898. Rille and Riecke explained in Mracek's *Handbuch* that this was another case of creeping disease. The patient was a young farmer on whose right cheek appeared a narrow red line $10\frac{1}{2}$ cm. in length, accompanied by an itching sensation. There was a dark spot at the end of the line from which he extracted a white (?) larva 1 cm. long, and with it the disease stopped.

(11) Kaposi's case:¶ A girl, aged 2 years, had red itchy specks on the upper part of the back between the two shoulder-blades. After a while a narrow elevated red line proceeded towards the left shoulder, and moved first straight, then serpiginously. After changing its direction several times it reached the edge of the left hip-bone. The older portions were flattened and of light brown. Most of them were perceptible. The recent part made a straight line slightly raised, bright red, and 1 mm. in width. On the right knee-cap there was also an elevated serpiginous red line. A third similar lesion was on the front of the right thigh. These three lesions had no connection with each other. The line progressed slowly once or twice a day, when the skin around the end reddened all at once like urticaria for several centimetres, and the line rapidly advanced at the rate of from $\frac{1}{2}$ to $1\frac{1}{2}$ cm. in an hour. Sometimes it was more rapid and

* *Arch. f. Derm. u. Syph.*, 1897, Bd. xxxviii, p. 153.

† *Ibid.*, 1899, Bd. xlix, p. 401.

‡ *Brit. Jour. Derm.*, 1896, viii, p. 145.

§ *Arch. f. Derm. u. Syph.*, 1898, Bd. xlii, p. 252.

|| *St. Petersburg. med. Wochens.*, 1898, No. 20.

¶ *Wien. klin. Wochens.*, 1898, p. 399.

even went 15 cm. in twenty-four hours. Such phenomena could only be explained, he said, by a supposition that a certain parasite burrowed its way under the skin, making straight or curving marches.

Kaposi also said that the cases recorded by the Russian observers were the same disease as his own, that there was no other change in the skin except reddening and desquamation, that though in Ehrmann's case there were blisters and vesicles, such differences might be attributed to the difference in the susceptibility and reaction of each person's skin.

I myself say that Kaposi's case began as the papular form but changed on the way into the erythemato-papular form.

(12) Rille's case :* The fourth instance in Austria. A boy, aged 2 years, an inhabitant in the same district as Neumann's patient. At the time the lesion was examined there remained on his back a line that had already been made by the larva. It could still be seen very clearly as a line of reddish-yellow, flattened to the normal level of the skin and slightly desquamating. So far it was the erythematous form but it may have been the papular form before.

(13) Rawnitzky's case in Russia :† On the left cheek of a peasant woman a line appeared, which ended with a blister below the corner of the mouth. The blister contained a grey particle as large as a hemp-seed. The case may have been one of the papulo-vesicular form.

(14) Schmidt's case :‡ Reported in 1900. The fifth instance in Austria. It occurred in a boy, aged 2 years. A typical line grew in that part of the body not closely covered with the clothes. The older portion was flattened, slightly desquamating, and covered with a blood-scab. Afterwards it left bright white scars here and there. Around the scars there was pigmentation.

The appearance of the scars is peculiar, but no doubt the case belongs to the erythemato-papulo-vesicular form.

(15) Bérenger and Ferrard's case :§ A red line $\frac{1}{2}$ mm. wide and several centimetres in length appeared on one leg and extended gradually to the other one. At the extremity of the line there was a pin's-head-sized vesicle. The line advanced 3 to 4 cm. a day. Erythemato-vesicular form.

(16) Topsant's case :|| A girl, aged 8 years. She always lived among cattle. In her countryside *Hypodermu bovis*, de Geer, prevailed, and its larva was popularly called "cru." From the end of January to March 7th the girl complained of a severe pain like pin-pricking at the spot where the larva was, and repeated the cry—"Ca pique oh! ca pique!" The pain was so severe that she fainted. Thus while the parasite remained in her body fits of fainting were repeated every two or three hours a day continuing from ten to fifteen minutes. Her health suffered greatly from them. The pain was felt in fresh places every day and one could trace the course of the larva as it progressed.

The line appeared first at the lower part of the neck, came above the breast-bone, was raised very slightly above the level of the skin at unequal intervals, red but without hyperæmic areola. Sometimes its trace was lost, but again

* *Wein. klin. Wochens.*, 1898, p. 400.

† *Derm. Zeitschr.*, 1898, p. 704.

‡ Cited in Mracek.

§ *Ibid.*

|| *Arch. de Parasitol.*, 1901, iv, No. 4, p. 609.

appeared as a purpuric line. The line turned round the left upper part of the body, crossed the breast and passed over the right shoulder. At last the larva came behind the neck, proceeded to its lower part, there made its appearance in the centre of a swelling as large as a hazel-nut, and was extricated with a pin. The whole length of the line measured almost 64 cm. According to Prof. Brauchard's study, the larva is said to be the *Hypoderma lineata*, de Villers, in its second stage. The larva was 6 mm. long and $1\frac{1}{2}$ mm. thick. In Topsant's report the histological investigation is wanting, but since the larva is well known to go through the subcutaneous tissue of the ox, it may be assumed that in this patient also the larva proceeded through the same tissue.

Topsant's case is not commonly quoted in the literature of creeping disease. It is mentioned indeed in Mracek's *Handbuch*, but with some hesitation in considering it as creeping disease. This is because all parasites found in creeping disease were thought to be the *Gastrophilus* larva, and because the few reports in which any histological investigation was made (most of the reports wanting it) found their histological changes in the construction of the tunnel in the epidermis, but especially as the subjective symptoms in his case were so different from the ordinary one (itching).

I want, however, to consider his case as one of creeping disease, because its objective clinical symptom is of linear formation. When we make clear the definition of creeping disease and classify the various cases according to their causes, we shall have good reasons to believe that Topsant's case belongs to the same disease. I will classify it in the erythematous form from the clinical point of view.

(17) Van Harlingen's three cases*: The first reports in America. One occurred in a girl four years old. The eruption began on the heel as a small blister, extended gradually up the inside of the foot in a serpiginous course, and ended in a spiral over the internal malleolus. The lesion was a line of small vesicles about 4 in. long and $\frac{1}{16}$ in. wide. The second case likewise occurred in a child. A flat, red, narrow line appeared upon the sole of the foot extending from one side to the other, resembling the edges of a circinate erythema. For some time there was no change in the appearance of the disease but later it became raised and brighter red. Within a few weeks the disease extended up over the dorsum of the foot. The third case occurred in an adult. A small itchy pimple began upon the back of the hand and soon extended in a serpentine course, producing a cord-like elevation of the epidermis.

Harlingen's first and third cases may be called the vesicular form, and his second case may be said to have begun in the erythematous form and changed into the papular form.

(18) Stellwagon's case.† The second report in America. This case occurred in a boy, aged 9 years, on the lower part of the leg as well as on the lumbar and sacral regions. The eruption on the leg consisted of an irregular tortuous erythematous, erythemato-papular, and papulo-vesicular line of some inches in length and from about $\frac{1}{16}$ to $\frac{1}{8}$ in. in width and in elevation. The older portion was scarcely perceptible, the newly made part more marked but

* *Journ. Cut. Dis.*, 1903, xxi, p. 436.

† *Ibid.*, 1903, p. 502.

gradually fading, leaving pigmentation behind. The spreading portion made a thin, thread-like, hyperæmic line at the extremity. In a few hours or within a day or two it became raised and formed an erythematous ridge. It changed further into a papular line with vesicular projections here and there in its course. The still older ridge had been changed into a distinctly papulo-vesicular or completely vesicular line. Becoming older again the line consisted of a thin, narrow, uneven crust or crusty scale with a trifling hyperæmic border. On the yet older part of the track the skin had flattened down to its normal level and was marked by slight hyperemia and pigmentation, which was less and less perceptible as the point of origin was approached. As a subjective symptom there was an itching sensation. At the time the patient was examined the lesions on the back and the sacral regions were already pigmented lines. Stelwagon added that the case as above described was practically a duplicate of the others that had been reported by Lee, Crocker, Neumann, Sokolow, Samson, Kumburg, Kaposi and Van Harlingen, with, however, probably more decided exudation.

I consider this case as resembling most nearly my own case and almost the same as Harlingen's first and third cases, and so classify it in the erythematovesicular form. According to its photograph, however, it may be said to belong to the vesicular form.

(19) Hamburger's case*: The third instance in America. The patient was an imbecile boy, aged 4 years. A serpiginous line was situated on the right buttock about its central portion and traversed 11 cm., measuring the shortest distance between its two extremities. Its direction was approximately vertical, diverging slightly outward from below up. Starting from a point near the gluteal fold, the line ran toward the middle line, then up, then out and up, then upward towards the median line, then once again passing outward and upward, and ending in a hook-like process. The line was about 2 mm. in width, though its breadth varied a little at different points. It was in the upper half pale red, slightly raised, and was surmounted by a line of vesicular formation. At the extreme upper end the vesicular line made several loops on its red base and a clear serous fluid oozed from it. The lower half of the lesion, evidently the older, was represented by a curling line of purplish-brown pigmentation. Some delicate crusts overlay this region, evidently representing the remnants of a former vesicular line. I will classify this case in the erythematovesicular form.

(20) Stelwagon's second case†: The patient perceived a short, elevated, slightly red line, which extended slowly from day to day. When he came under the doctor's care it was 4 to 5 in. long, tortuous and irregular. It differed from his first case in being shorter in length, and containing only one parasite (this is only inferential, as Stelwagon did not actually see the parasite). The beginning part of the line was already sunken below the normal skin level, with slight pigmentation. The rest made a line-like ridge, looking in some parts solid, in others vesico-papular, and in others distinctly like a narrow, irregular linear vesicle. Towards the extending end it was of an erythematopapular

* *Journ. Cut. Dis.*, 1904, xxii, p. 217.

† *Ibid.*, 1904, xxii, p. 359.

nature, and at the extreme end showed as a thread-like erythematous line. A magnifying glass revealed a minute, grain-like, greyish-white speck. No doubt this was the parasite but he failed to prove it:

I will classify this case in the erythematopapulo-vesicular form.

(21) Brodier and Fouquet's cases*: In 1904 Brodier and Fouquet reported a case in which a sewer-worker had from six to eight parallel lines on one side of the chest. These lesions healed in three weeks. We have no means of finding out the particulars.

(22) Lenglet and Delamy's case†: An artisan, aged 39 years. On the outer side of the right calf there was a dark-red palm-sized lesion of lymphatic gland inflammation, and its centre consisted of the above-mentioned swelling and the trace of its being burned. In this lesion there were burrows looking like large lesions of itch. They were bright red or dark red along the borders. So was the middle ridge, or it was pink coloured. The lines were rather distinctly elevated and 3 mm. wide. They ran over the lesion in a wavy irregular course and crept like the head of Medusa over the healthy skin. The lines ran to and fro, crossed, separated, were entangled, proceeding in a zigzag course or like curled hair. But such a labyrinth was only confined to the branching part and the main burrow proceeded with a steady course. The hypothetical parasite dug very rapidly, running in some places 3 or 4 cm. a day. The parasite also seemed to march as vanguard for the line, for sometimes it turned in a new direction at a spot 3 to 4 mm. in advance of the extending end. The depth of the line was generally very insignificant, and the hair on the tract was cut from the root. Some lines extended 5 cm. from the lesion, another crossed the upper part of the skin and reached the front inner side of the leg. The line faded here and there. These fading parts were no more red and more pigmented on the borders than in the middle. As a subjective symptom there was an itching sensation, which, however, did not increase at night. Prof. Brocq and his assistant endeavoured to capture the parasite, but were unsuccessful. They made a very minute investigation of the tissue. This may be classified in the erythematopapular form.

(23) Shelmire's case‡: The patient was a doctor, aged 59 years. He had at first a small sore on the left side of the ring finger-nail on the right hand. A small red line extending from this sore had crossed the finger-ends in three days, and travelling along the right side of the nail reached the third joint of the same finger. In five days it had extended almost to the second joint, in seven days it had crossed over to the left side, in nine days it was up above the second joint about $\frac{1}{2}$ in. The progression stopped for a week and then proceeded 1 in. below the second joint, still keeping to the left side. During the next week it made a zigzag route up and down over the same spot, and at last turned round to the palmar side of the same finger. The lesion, which had in part formed linear scabs in consequence of incisions and burnings, was a slightly-raised red line near the third joint, and was distinctly raised and $\frac{1}{16}$ in. broad below the second joint. In the latter place, under a magnifying glass, he could find small vesicular spots

* Cited in Mracek's *Handbuch*.

† *Ann. de Derm.*, v. p. 107.

‡ *Journ. Cut. Dis.*, 1905, xxiii, p. 257.

but the parasite eluded capture. This is another case of the erythematopapulovesicular form.

(24) Kengsep's case:* The sixth instance in Russia. A child, aged 2 years. A line extending from the left side of the gluteal region to the epigastrium. The older portion was pale yellow and slightly desquamating. The new portion was red, 1 mm. wide, slightly elevated and cord-like. The middle part was dark brown. There was only one line, not branching. The rate of progression was irregular, sometimes making 10 cm. in twenty-four hours. With a view to cure, a piece of skin $1\frac{1}{2}$ cm. long was excised from the newest red-line region. The excised piece was utilised in part for a bacteriological study by means of various cultural bases, but no growth, except a chain-like bacteria on the gelatine base, was found. It was also used in part for tissue study, but as the extreme end was not excised he could not find the causative larva. This belongs to the erythematopapular form.

(25) Hutchins' cases:† The sixth instance in America. The first case was that of a boy, aged 6 years. The burrow began in the middle of the ulnar side of the left palm, and taking a wavy course and progressing about an inch a day advanced towards the middle of the palm. It looked like a miniature of the progress of a garden mole. Then it turned to the ulnar side of the palmar surface of the ring-finger and proceeded up to about the middle of the second phalanx, and then, running along the radial side of the palmar surface of the same finger, returned to the palm.

The second case occurred in a farmer's lower leg. The description about it is more vague than that of the first case. In both cases the reporter only emphasises the effectiveness of chloroform on the lesion. He failed to find the parasite.

(26) Moorhead's case:‡ The seventh instance in America. A boy, aged 5 years. A parasite crept in the epidermis, pursuing a zigzag course and giving the skin much the same appearance as the surface-marking of moles in the soil. The parasite moved from $\frac{1}{2}$ to 1 in. in twenty-four hours, leaving a raised line of epidermis about $\frac{1}{2}$ in. in width. He did not actually see the parasite, but he said that it was a Brazilian worm which disappeared during the winter and came out with the approach of the warm season. In his report he used the term of "creeping disease."

(27) Boas' case:§ The first instance in Denmark. Prof. Boas' case was originally that of Dr. Quorturps. The worm found by the latter from a creeping-disease case was sent to the former, who was a zoologist, and the professor published a clinical description along with his own zoological study of it. This was the third report concerning the parasite itself.

The patient was a boy, aged 3 years. He had an excoriation covered with a crust on the right side of his forehead, and from that spot a bright red raised line, about 1 mm. in width, extended in a wavy course. On the third day it reached the right eyebrow and its extremity became œdematous. Along either side of the line there was a white, slightly raised, œdematous border, so that the

* *Derm. Centralb.*, 1906, ix, p. 194.

† *Journ. Cut. Dis.*, 1906, xxiv, p. 270.

‡ *Journ. Amer. Med. Assoc.*, March 22nd, 1906, p. 91.

§ *Monats. f. prakt. Derm.*, Bd. xlv, p. 505.

entire breadth of the line was 2 mm. He incised the entire line up to the extremity with a small scissors and treated it with zinc chloride, but the line still proceeded. The next morning it reached the cheek, extending about 8 cm. during the night. Examining the extreme end on the front of the ear with a magnifying glass, he detected a small dark segmented particle about 1 mm. long, and could extricate it with a pin. (I will describe this further in my discussion on the cause of the disease.) This belongs to the papular form.

(28) Wosstrikow and Bogrow's case: * The seventh instance in Russia and the fourth report of the discovery of the parasite. The patient was a girl, aged 12 years. On waking from a slumber under a tree she felt an itching sensation on the left temple at the end of the eyebrow. Soon after a curving red line appeared at the spot, and extended to the margin of the hairy region. Then turning below it reached the edge of the chin. The progression was 15 cm. in two days. The itching was severe in the daytime, but the progress of the line was faster during the night. Fortunately he could extricate the parasite from the broad spot at the end of the burrow, and with that the disease stopped. Wosstrikow said that he had met two or three cases of this kind yearly for the past twenty years. The change on the skin in these cases consisted in a much crooked or twisted, raised, ridge-like line from 3 to 4 mm. wide. The elevation was not prominent on the palm or sole. One could distinguish the beginning from the extending end. In the older portion the skin was less changed and gradually recovering the healthy state, while the new end was extending in a club-like shape. The base of the ridge-like line was of a yellowish-pearly colour with narrow borders of rose colour. The skin around underwent no change. The burrow, when opened with a pin, let out serum. The ground of the burrow presented a velvety appearance, was bright red and $\frac{1}{2}$ mm. wide. He found a small white particle in the burrow, but unfortunately he could not determine whether it was fibrin or the excrement of the parasite. This belongs to the papulo-vesicular form.

(29) Hutchins' third case: † A boy, aged 12 years. There was a small blister behind the head of the first metatarsal bone in the sole of the left foot. Up to the day before the patient came to the doctor two adjacent ring-like loops or circles had developed, with enclosed areas of dried vesicular lesions which resembled a recovering pompholyx. The circuitous line extended to as far as the middle of the sole. The line was raised and looked like a miniature of a mole-burrow, yellowish from serum in the middle ridge and pink in the slopes of the burrow, making a distinct vesicle where the larva was active (so he described it, but did not find the larva in question).

(30) Gosman's cases: The eighth instance in America. ‡ The first case was that of Mrs. B—. She had first a small raised eruption on the right ankle. A red line developed from this spot and ran up and down around the ankle. After three months a similar eruption appeared on the dorsal surface of the left hand. It was a raised red line 2 mm. in width, covered here and there with small vesicles. It began in the middle of the back of the hand, and curving and

* *Arch. f. Derm. u. Syph.*, 1908, Bd. xc, p. 323.

† *Journ. Cut. Dis.*, 1908, xxvi, p. 521.

‡ *Journ. Amer. Med. Assoc.*, 1910, No. 1, p. 38.

looping several times ended down between the forefinger and thumb. This belongs to the papulo-vesicular form.

The second case was that of a surgeon. He first perceived a small red pimple, very itchy, on the middle of the plantar surface of the left foot. From the pimple extended a small serpiginous red line progressing about 1 in. in twenty-four hours. Two weeks later a similar red line appeared on the top of the fourth toe of the right foot, and turning round the same toe came to the plantar surface of the foot; then proceeding toward the heel for from 2 to 1½ in. turned to the left about 1½ in.; finally went back to the right. In both lines he failed to find any parasite. This belongs, perhaps, to the erythemato-vesicular form.

(31) Haase's case: The ninth instance in America.* In his report he went into detail about the manner of progression of the line, but there was no description about its nature. He compensated this defect with three photographs. According to these photographs this may safely be classified in the vesicular form.

(32) Rudell's cases: The tenth report in America.† It was the first time that the larva was found in America.

Case 1: A farmer, aged 45 years. He had a tortuous line from about 12 to 13 in. long from the left shoulder down to the left arm, the lower end being inflamed while the upper end gradually faded out into a scaly line. He tried to find the parasite by making a small incision just ahead of the advancing line, but he failed.

Case 2: A boy, aged 13 years. Two serpiginous lines extended from the forehead downwards. A few days before this he felt an itching sensation near his left eyebrow associated with inflammation. From this spot the eruption spread in two directions, one line making a curve on his forehead and then extending over the face, the other line going down through the eyebrow and over the eyelid. During the second night, while the patient was sleeping, the larva had crossed from the upper to the lower lid and then down over the face. It was on the fourth day that Dr. Rudell examined the lesion. The next day every line had advanced 1½ in. Under a magnifying glass he detected a small dark spot at the end of the line. He incised the cuticle with a cataract knife not deep enough to hurt any blood-vessels, and as he lifted the incised flap the larva emerged from its burrow. Under the glass he could see the larva moving. He said that he found another larva from the second line, but in neither case did he give any zoological description. By placing his picture of the larva side by side with that of Sokolow he seemed to think their similarity to have been fully proved. In his description of the character of the line details are also wanting.

(33) Cates's case:‡ The eleventh report and the second instance in which the larva was discovered in America. An adult, aged 32 years. He felt an itching sensation at a spot on the outer side of the upper part of the right forearm. Closely examined, diffuse reddening was found, possibly owing to hard scratching by the patient. Examined still more closely, there were found two isolated, intensely reddened erythematous areas from 3 to 4 mm. in diameter, and separated from each other by 2½ cm. The centre of these erythematous areas was slightly

* *Journ. Cut. Dis.*, 1910, xxviii, p. 393.

† *Journ. Amer. Med. Assoc.*, 1913, lxi, p. 247.

‡ *Derm. Wochens.*, 1914, Bd. lviii, p. 417.

indented and desquamating, and there was a minute, almost imperceptible black dot. The doctor extricated this dot with a needle without any bleeding, and under a magnifying glass perceived a larva nearly the same as that reported by Sokolow, except that there were no segments in the narrower part of it. Its movements were very slight. According to the clinical description it seems to me that the case was the earliest stage of creeping disease, as yet forming no line. Concerning the parasite he only said that it resembled that of Sokolow, and did nothing but give a picture of it.

(34) Kirby-Smith's case: The twelfth report in America. I could not get the original report. According to Knowles it seems to contain only a clinical description.

(35) Knowles' case*: The thirteenth report in America. A girl, aged 20 months. The disease occurred in the upper portion of the mons veneris and both buttocks. There were three distinct burrows. The vaginal mucous membrane was unattacked. An attempt was made to cure it with nitric acid but failed. Dr. Hodge excised all three tracts. Four days after excision the larva began a fresh progression at the edge of the excised spot on the left buttock and reached the lower edge of the left mons veneris. Knowles cut out all the passage and made 3000 sections out of it, of which 150 showed the burrow and 30 exhibited various portions of the larva. He gave no description of the larva thus shown in the sections.

(36) Gaskill's case:† A girl, aged 11 years. She had what appeared like a mosquito bite on the upper part of the inside of the left thigh, from which started a serpiginous line about 18 in. long, the earlier part presenting brownish pigmentation.

(37) Whitehouse's case:‡ A man, aged 30 years. He had about twenty-five active lesions: formerly he had thirty-eight. Some of the burrows were from $1\frac{1}{2}$ to 2 in. long. The burrow did not contain any larva. The patient was a member of the United States forces sent to the Mexican border and contracted the disease while staying there. According to him there were thirteen cases like his own.

(38) Howard Fox's case:§ The sixteenth report in America. A soldier who had returned from the Mexican border. He had an elevated, urticarial, irregular linear lesion on the back, about $\frac{3}{4}$ in. in length. About $\frac{1}{2}$ in. from one end of this lesion was a little pin-head urticarial spot, which was doubtless the beginning of a second burrow. This belongs to the papular form.

* *Journ. Amer. Med. Assoc.*, 1916, p. 172.

† *Journ. Cut. Dis.*, 1917, xxxv, p. 107.

‡ *Ibid.*, 1917, xxxv, pp. 187, 263.

§ *Ibid.*, 1917, xxxv, p. 608.

(To be continued.)

PSEUDO-ICTERIC XANTHOSIS.

F. PARKES WEBER, M.A., M.D., F.R.C.P.LOND.

THE appearance of true jaundice is due to a coloration of the skin and sclerotics of the eyes by bile-pigment (bilirubin), and it may be more or less imitated by various "pseudo-icteric" conditions. In regard to yellowness of the sclerotics and conjunctivæ the racial factor must be remembered. Thus, Dr. W. H. Willcox, in his Lettsomian Lectures on Jaundice (Medical Society of London, 1919), writes: "In some Indians a definite yellow pigmentation of the conjunctivæ occurs, giving a characteristic appearance of jaundice. In Mesopotamia I had a Madrassee servant who had marked yellow sclerotics." This condition was due to normal racial pigmentation.

During the Great War attention was drawn, especially in France,* to a form of pseudo-icterus, due to the consumption of picric acid. The picric acid was ingested with the intention of simulating jaundice and thus escaping military service. In such cases, when 5 to 15 grains of picric acid have been swallowed the skin and sclerotics and the blood-serum and cerebro-spinal fluid become yellow. The urine contains picric acid or its derivatives, and in about a week's time, after large doses, it may likewise contain bilirubin, a true icterus having been added to the pseudo-icterus.

In December, 1919, another, but slighter, form of pseudo-icterus was described in America by A. F. Hess and V. C. Myers, of New York, who termed the condition of the blood giving rise to it "carotinæmia."† It was due to the eating of carrots, swedes, etc., and the discoloration—which was specially well marked on the palms of the hands and soles of the feet and did not involve the sclerotics at all—gradually disappeared in their two cases (both children) when carrots were removed from the diet. Hess and Myers write in con-

* Amongst the first observations were those as early as 1914, by Isnard, Garnier, Rousille and Vannier. An excellent summary of the subject was given in the *Presse Médicale*, Paris, 1918, xxvi, p. 16.

† A. F. Hess and V. C. Myers, "Carotinæmia: A New Clinical Picture," *Journ. Amer. Med. Assoc.*, 1919, lxxiii, pp. 1743-1745.

clusion: "We have shown that a diet rich in carotin (carrots, spinach, egg-yolks, oranges, etc.) will bring about a yellow discoloration of the skin, a condition resembling mild jaundice, except for the non-involvement of the sclera. This pigmentation no doubt has been frequently overlooked, confused with mild grades of icterus, or attributed to some obscure metabolic disturbance. It cannot be of rare occurrence, as carotin is widely distributed throughout our diet, being a constituent of almost all our vegetable foods. It is a disturbance which therefore will occur most readily in those subsisting on a dietary containing a large quantity of vegetables. The discoloration of the skin is accompanied by a similar yellow tinging of the blood-serum and the plasma. The pigment in the blood was identified as carotin. . . . The urine was coloured yellow as well as the serum. When a small quantity of carotin was ingested the pigment appeared rapidly in the urine."

Earlier in 1919 a pseudo-icterus of the same nature, observed in children, had been discussed by W. Kauper,* W. Stoeltzner,† E. Klose,‡ and H. Salomon,§ but their short reports had apparently escaped the notice of Hess and Myers. According to Klose only the parts of the children which were most exposed to the light became thus coloured.

A pseudo-icteric diffuse yellowness, or "xanthosis," of the skin in certain young patients suffering from diabetes mellitus was mentioned by C. von Noorden at the International Dermatological Congress of 1904.|| According to him it especially affected the palmar surfaces of the hands and the plantar surfaces of the feet, and he suggested that it might possibly be related to "diabète bronzé." This "diabetic xanthosis" was described two years later (1906) by H. Salomon and C. von Noorden in the latter's text-book on *Metabolism* (English edition, London, 1907, vol. iii, p. 781). Salomon, in a recent paper,¶ discusses the whole question of xanthosis of the skin,

* W. Kauper, *Munch. med. Wochenschr.*, 1919, lxvi, p. 330.

† W. Stoeltzner, *ibid.*, p. 419.

‡ E. Klose, *ibid.*, p. 419.

§ H. Salomon, *ibid.*, p. 564.

|| C. von Noorden, *V. Internat. Dermatologen-Kongress, 1904, Verhandlungen und Berichte*, Berlin, ii, pt. i, p. 121.

¶ H. Salomon, "Ueber Xanthose der Haut, namentlich bei Gesunden Leuten, und über Xanthämie," *Wien. klin. Wochenschr.*, 1919, xxxii, p. 495.

especially its occurrence in healthy individuals. The pseudo-icteric coloration is of a fresh canary-yellow tint and is never greenish yellow, and thus differs from many *old cases* of true jaundice. The eyes (sclerotics and conjunctivæ) are less or not at all coloured. A yellow coloration of the blood-serum, that is to say "xanthaemia," is much commoner than xanthosis of the skin, but the latter condition, whenever it occurs, is invariably accompanied by some degree of xanthaemia. Both are perhaps due to a lutein-like lipid substance in the blood. The bilirubin in the blood-serum is not necessarily increased, and there seems to be no necessary connection between xanthosis and xanthomatosis of the skin. There is probably a peculiar tendency of the skin in certain individuals to take on the xanthosis coloration, and there may sometimes be a special connection of xanthosis with dyspepsia, constipation, diabetes mellitus or particular articles of food. Hayem, at the Société médicale des hôpitaux de Paris, seems once to have described a case of xanthosis of the skin in a dyspeptic subject under the heading, "Coloration spéciale des téguments chez certains dyspeptiques, ictère sans pigments biliaires ni urobiliue dans les urines."

The variable yellow coloration of the skin in two children with Diabetes mellitus shown recently by Dr. George Graham at the Section for the Study of Disease in Children, Royal Society of Medicine (November 26th, 1920), was doubtless this kind of cutaneous xanthosis. Dr. E. G. Graham Little kindly showed me one of two cases of what he terms "dyschromia of the face," which he brought before the Dermatological Section of the Royal Society of Medicine on June 17th, 1920 (*Proceedings*, 1920, xiii, p. 122). The patient was a young man, aged 22 years, employed at rubber tyre-moulding. The yellowish-brown cutaneous discoloration affected chiefly his face and the palms of his hands and was almost certainly not due to his employment, but I should hesitate to regard it as a variety of cutaneous xanthosis.

On the other hand, the following case seems to me now to be an extraordinary one of congenital xanthosis, involving the sclerotics, in an otherwise healthy man, though I originally demonstrated it at the Clinical Section of the Royal Society of Medicine on February 9th, 1917 (*Proceedings*, 1917, x, p. 13), under the heading, "Congenital (Non-familial) Jaundice, without Splenomegaly, in an otherwise

Healthy Man." G. T. D—, an Englishman, was at that time aged 50 years. He was an active, well-built man, of average general nutrition, and (according to his mother) he had been yellow on birth, and had remained more or less yellow ever since then. The yellowness affected the sclerotics as well as the skin. On the whole he seemed to have enjoyed unusually good health, and had not been subject to headaches, "bilious attacks," or cutaneous pruritus. He was sure that his fæces and urine had been of ordinary colour, like those of normal persons. He had had no xanthoma, not even Xanthelasma palpebrarum. His friends told him that his yellow coloration was more marked at some times than at others. There was nothing special in his family history; none of his four children and none of his other relatives were known to have ever had a similar yellow appearance. I could find nothing abnormal by ordinary examination of the thoracic and abdominal viscera. There was no enlargement of the spleen or liver or superficial lymphatic glands. His urine was clear, of pale yellow colour and acid reaction; the ordinary chemical reactions were negative for albumen, sugar and bilirubin, and for excess of urobilin, urobilinogen and indican. In regard to the examinations of the blood and blood-serum I was greatly indebted to Dr. H. Schmidt. The hæmoglobin was 105 per cent.; erythrocytes, 6,400,000 to the cubic millimetre of blood; white cells, 5710 (of which about 80 per cent. were polymorphonuclear neutrophiles). Microscopic examination of stained blood-films showed nothing special, no nucleated red cells, no poikilocytosis, no polychromatophilia and no marked anisocytosis. The blood-serum was more deeply coloured than that of most persons, and I suppose that one could say there was a condition of "xanthæmia"; the ordinary chemical tests (as far as they could be relied on) were negative for bilirubin, urobilin and urobilinogen. The resistance of the erythrocytes to hæmolysis, as tested by graduated hypotonic saline solutions, was found to be scarcely outside normal limits. The blood-serum gave (January, 1917) a negative Wassermann reaction for syphilis.

Since then the man, who is now aged 54 years, has kept in excellent health, but when I saw him recently (February 10th, 1921) the sclerotics (conjunctivæ) of his eyes were of a light bright canary-yellow colour. I could still satisfy myself that there was no enlargement of spleen or liver which could be detected. He again assured

me that he did not tend to suffer from constipation or from any kind of "biliousness," and that the yellowness had not been observed in any other member of his family.

CAMEL ITCH.

WILLIAM DYSON, O.B.E., M.D.,

Dermatologist to the Manchester Royal Infirmary ; Physician to the Manchester Hospital for Diseases of the Skin.

IN November, 1917, I was ordered from Egypt to Palestine to report on an epidemic of skin-disease which had broken out amongst the *personnel* of the Camel Corps. I found the men suffering from a papular, intensely irritative dermatitis, of which the following are the chief characteristics: The individual lesions are situated at the entrance of the hair-follicles. There are no burrows to be seen. The lesions are similar in appearance to those caused by the harvest bug (*Leptus autumnalis*).

Distribution.—The disease is localised chiefly on the arms, secondarily on the legs and chest; in severe cases the whole body is involved. Secondary pyogenic infection is present in many cases, the result of scratching.

It is to be noted that the parts attacked were those in which the skin came in contact with the camels, or on which the scales alighted in the act of grooming. A light band, such as a belt, sharply limited the spread of the disease.

Symptoms.—Intense itching, especially when the patient becomes warm at night; this irritation was so severe in some cases as to prevent the sufferer from sleeping. The camels of this unit were badly infected with mange.

Method of investigation.—Specimens of the skin were obtained by snipping off individual papules with a pair of curved scissors, and after prolonged soaking in liquor potassæ were examined under a microscope. Scrapings from the skin were examined in a similar manner, and also scrapings from the skin of camels suffering from mange.

Ætiology.—(1) The disease is caused by a parasite similar to, but smaller than the *Acarus scabiei*.

(2) The parasite enters the human skin by burrowing down a hair-follicle. I have been able to demonstrate the female acarus in the human skin lying at the root of a hair-follicle.

(3) In two cases Dr. Craig, of No. 2 Military Laboratory, has found a lemon-coloured ovum in scrapings from the human skin. In other cases our search for ova was negative.

(4) I have not succeeded in finding the male acarus either on or in the human skin.

(5) In scrapings from camels suffering from mange the acari, male and female, are easily found.

Treatment.—The camel acarus does not propagate its kind on the human species but dies after entering the skin, therefore all that is required in the way of treatment is to avoid contact with mangy camels and some antipruritic remedy to allay itching. I found an evaporating lotion containing carbolic acid quite satisfactory.

I wish to express my thanks to Capt. Craig, R.A.M.C., of No. 2 Military Laboratory, for much assistance in making this investigation.

Note.—Specimens showing this parasite were exhibited by me in 1919 in the Medical Section of the War Museum in Cairo, and will be shown in London when the Egyptian specimens are transferred to England.

ROYAL SOCIETY OF MEDICINE.
DERMATOLOGICAL SECTION.

MEETING held on November 13th, 1920, DR. ARTHUR WHITFIELD, President of the Section, in the Chair.

Dr. J. M. H. MACLEOD showed a case of *Urticaria pigmentosa with bullous lesions*. The patient was a boy (firstborn), aged 9 months, born at full time, and breast fed. There was no history of any such skin-disease in the parents. The disease appeared at the age of 3 months. The eruption was acute, and the case belonged to the mixed type of *Urticaria pigmentosa* as both macular and nodular lesions were present. The eruption came out first on the back, then spread over the body, and had been increasing ever since, new lesions tending to come out in crops. It was now widely distributed over the whole cutaneous surface excepting the palms and soles, but including the scalp, and was especially profuse on the trunk and proximal parts of the limbs. There were no lesions on the mucous membranes. Some of the lesions were not palpable, while others were definitely raised; they were pale fawn in colour, irregular in outline, and varied in size up to patches or plaques several inches across. The skin over the lesions did not present the "shagreenated" appearance which occurred sometimes in cases of this disease. In addition to the more typical lesions there were variously-sized wheals which were whitish and surrounded by pinkish halos, and vesicles and bullæ were present varying in size from a split-pea to blebs an inch in diameter. The initial lesion appeared to be either a wheal or a bulla.

When the case was first seen at the Victoria Hospital for Children only wheals, macules and plaques were visible, but a month later bullæ had appeared. When he first saw the patient the bullæ were present, and the pronounced urticarial element so masked the pigmentation that he thought at first it might be simply a case of ordinary bullous urticaria. The lesions caused much itching, especially at night, and there was well-marked dermatographism. There was no general glandular enlargement. In spite of the extent of the eruption the child's general health appeared to be excellent.

A piece of tissue from a raised, faintly pigmented lesion on the side

of the abdomen was excised for microscopical examination. The sections were stained by the polychrome methylene-blue method and were quite characteristic of *Urticaria pigmentosa*. The epidermis was somewhat stretched, and pigment-granules were present here and there in the cells of the basal layer and its neighbourhood. In the corium there was an infiltration, consisting mainly of mast-cells, densest in the subpapillary layer and becoming more sparse towards the lower part of the rete. The cells were grouped chiefly around the blood capillaries and varied in shape and size, some being fusiform, others cuboidal. The collagen bundles were separated by œdema, and here and there were broken up and formed spaces in which the mast-cells were deposited.

The special interest of the case was the occurrence of the bullous lesions; this he had never actually seen before, though he knew it had been observed. The acuteness of the eruption pointed to a toxic rather than a nævoid condition, and suggested the possibility of the disease being due to some foreign protein which was responsible for the urticaria, the bullæ, the pigmentation, and the peculiar cellular infiltration of mast-cells. In cases of this type Sangster's name of "*Urticaria pigmentosa*" was more applicable than Tilbury Fox's term "*xanthelasmaïdea*."

Dr. GRAHAM LITTLE considered the case unique; he had never seen an instance of bullous *Urticaria pigmentosa*. The sections, however, were sufficient to establish the diagnosis. Had any members seen *Urticaria pigmentosa* without mast-cells? Sutton had described such cases, but he (the speaker) regarded the presence of mast-cells as essential to the diagnosis.

The PRESIDENT agreed with Dr. Little's remark concerning the diagnostic value of mast-cells. He had always believed there were two diseases in children somewhat in the same class: one was *Urticaria pigmentosa*, the other an ordinary urticaria which left a little pigment on disappearance. The difference lay in the infiltrative character of the lesion in true *Urticaria pigmentosa*. If anyone suggested to him that a condition was *Urticaria pigmentosa* and there were found no mast-cells, he would suggest a revision of the diagnosis.

Dr. MACLEOD (in reply) confirmed what the President said. It was not until he found mast-cells in the tissue that he arrived at the diagnosis of *Urticaria pigmentosa* with bullous lesions. He regarded mast-cells as pathognomonic of *Urticaria pigmentosa*.

Dr. J. H. SEQUEIRA showed a case of *Epidermolysis bullosa with epidermal cysts*. The patient illustrated a late stage of a case of that rare disease. Many of the older members of the Section would

remember a woman suffering from severe Epidermolysis bullosa, which had completely incapacitated her, so much so that the greater part of her life had been passed in hospitals and infirmaries, and many of their colleagues, as well as himself, had had her under their care. The patient now shown was an example of a less severe type. He was originally shown by him at a meeting of the Dermatological Society of London in 1904.*

The history now given by the patient (who was aged 20) was that ever since he was seen in 1904 he had had blisters varying in size from a threepenny piece to a five-shilling piece, and these had usually left scars. There were now large red cicatricial areas of fine papery consistence on the buttocks, shoulder and limbs. There were a few bullæ and areas of recent blebs covered with dry crust. The finger-nails were in the same dystrophic condition, and the epidermic cysts were still present in large numbers. The teeth were good. During the past five years there had been gradual improvement, the blebs appearing less frequently. There was little discomfort except when the bullæ became infected or "festered" as described by the patient. He had had nephritis with anasarca on two occasions in 1918 but the urine was now free from albumen. The Wassermann reaction (August 25th, 1920, and September 29th, 1920) was negative. An examination of the blood showed no abnormality. Sections of a hæmorrhagic bleb showed that the horny and granular layers of the epidermis had been stripped off the subjacent skin by blood.

It was important to note that though the patient had never been able to do manual labour he had been earning his living by clerical work.

Dr. S. E. DORE showed a case of *Pityriasis rubra pilaris*. He originally regarded the case as psoriasis associated with follicular ichthyosis as, when he first saw it, the scaling was very marked and the follicular involvement was not so apparent.† In a recent paper on psoriasis it was stated that there were less than ten cases on record in which the affection began under the age of $2\frac{1}{2}$ years, and the same was probably true of *Pityriasis rubra pilaris*. This child was $3\frac{1}{2}$ years, and scaly patches, followed by a nutmeg-grater condition of the skin, was first

* *Brit. Journ. Derm.*, 1904, xvi, p. 460.

† C. M. O'Brien, *Med. Press and Circ.*, September 15th, 1920, p. 208.

noticed about six months ago. There were numerous scaly patches on the trunk and limbs, and marked prominence of the follicles on the extensor surfaces of the arms and legs. The horny plugs generally present on the back of the phalanges in adults were absent. The scalp and palms were dry and scaly, and the nails, especially of the toes, were thickened and striated. The child was born in India and had recently lived in Australia. The mother suffered from leucoderma of old standing, and an uncle was said to have had psoriasis. A brother and a sister were healthy.

Dr. H. G. ADAMSON considered that there might be a close relationship between Pityriasis rubra pilaris and psoriasis. Several cases shown before the Section as Pityriasis rubra pilaris had had psoriasis, or other members of the family had been subject to psoriasis, and he had a similar case in which the condition alternated with psoriasis. The two conditions behaved in much the same way, disappearing and coming again.

Dr. J. H. SEQUEIRA said he was able to endorse Dr. Adamson's remarks. Some years ago he had a case in which the eruption was at one time characteristic psoriasis and at another Pityriasis rubra pilaris.

The PRESIDENT found some difficulty in endorsing Dr. Adamson's view, because there were great differences between the two conditions, though he agreed Pityriasis rubra was probably related to psoriasis. They showed a quite different response to treatment. One very bad case he showed to the Dermatological Society of London six times; he had the patient under treatment for many years, and no form of treatment modified the eruption in the slightest. It was rare for attacks of Pityriasis rubra pilaris to get well in weeks; they generally hung fire for about a year or more, and then faded slowly away.

Dr. SIBLEY reminded members of the case of a boy, aged 6 years, whom he showed in June, 1913, with typical Pityriasis rubra pilaris, and the opinion expressed by many members was that he had both Pityriasis rubra pilaris and psoriasis. However, the condition cleared up in a few weeks; except for a marked prominence of the hair-follicles over the sacral region the whole skin appeared to be more or less normal. A few months after that the patient returned with a very acute guttate psoriasis, which covered him from head to foot.

Dr. E. G. GRAHAM LITTLE showed a *case for diagnosis*. The patient, a lady, aged 47 years, had been under Dr. Dore's care as well as his own. Her eruption began last May, and came out in increasing large patches and at more frequent intervals, and there was little if any recession in response to treatment. It was very extensive in distribution, itching fiercely; she seldom had two hours' continuous rest from it. There was also some tenderness in the patches, not as a result of treatment, as it was present when there was no treatment. The disease was not strikingly present on the

scalp, though her head was scurfy. She had had many illnesses, some of them septic, and that fact perhaps confirmed the President's idea of some septic focus causation. Possibly this was a premycotic condition, which was so difficult to distinguish, in the early stages, from eczemas and like conditions.

The PRESIDENT thought this was a case of what he was in the habit of labelling "flexural eczema"; it invaded the neck, front of arms, axilla, groins, etc., and was probably due to some focal infection or intestinal toxæmia. If the specific cause was discovered, a cure of the skin-condition followed treatment on that line. It was apparently identical with what the Americans called "acute infectious dermatitis." It was not infectious in the ordinary acceptance of that term, and it was not acute. The Americans put it down to a focal infection. In some cases the source of the trouble was in the teeth, in others in the tonsils; in fact one had to send the patients round to all the specialists, except the ophthalmic, for an investigation until the point was decided. Some patients were found to have a gynæcological trouble. He had investigated a number of cases from the point of view of indicanuria and urobilinuria, and a fair proportion gave a strong test for indican. He had one such patient recently, and she was now doing well; in her case the trouble was identified by the dentist, who found an apical abscess in the tooth.

Dr. S. E. DORE said this patient consulted him twice in the summer, and he regarded the condition as acute erythematous eczema, but the condition did not respond to treatment. At present he did not see anything about the case suggesting Mycosis fungoides, but members were acquainted with the mimicry of the premycotic stage of that disease, and a chronic skin-affection of that nature which did not clear up warranted the suspicion that it might be the premycotic stage of Mycosis fungoides. He instanced one case in which Dr. Whitfield, Sir Malcolm Morris and himself had made a definite diagnosis of psoriasis, and later the patient developed tumours, and became a typical case of Mycosis fungoides.

Dr. E. G. GRAHAM LITTLE showed a case of (?) *Kaposi's hæmorrhagic sarcoma or Schamberg's disease*. Two years ago he showed this lady as probably a case of Kaposi's hæmorrhagic sarcoma. In the interval, during which she had been under his observation, there had been no material change, except that in some parts of the leg the thickened patches had become more normal. When she was first shown, one suggestion made was that the dark pigmentation resembled that of Schamberg's disease. He noted the suggestion, and did not now feel sure that the case was one of Kaposi's disease; she had had it for sixteen years with little or no change. The pigmentation involved only the one leg, and was of a deep walnut brown, distributed in small round spots the size of a split-pea, with no nodular growth or ulceration at any time. The patient remained in excellent health.

Dr. A. WHITFIELD showed a *case for diagnosis*. The case of this boy, aged $8\frac{1}{2}$ years, was very difficult to diagnose when first seen. His general health was very fair. Since he was a baby he had had a cough, and for sixteen months he had been under dispensary treatment. There was no wasting, nor traceable signs of tubercle. Three years ago an eruption began on the left shoulder, and the story was that since the commencement of the eruption no lesion had disappeared. The type of lesion was a distinctly infiltrated, tough, hemp-seed-like papule, with practically no divergence from the normal colour of the skin. It might be a very slow, benign tuberculosis, or it might be a slightly hyperkeratotic morphea, such as he had seen with a similar aspect. A biopsy had been done, and he did not think anyone familiar with cutaneous histology could doubt that it was typical Lichen planus—a diagnosis which did not occur to him when he saw the patient.

Dr. H. G. ADAMSON said when he first saw the patient he had made the diagnosis of Lichen scrofulosorum. The elementary lesion was follicular, the scaly patch consisting of a group of follicular papules. He now agreed with Dr. Whitfield that the correct diagnosis was Lichen spinulosus; the microscopical section excluded Lichen scrofulosorum. He thought Dr. Whitfield's case very well illustrated the association of Lichen spinulosus with Lichen planus. It was his experience that Lichen spinulosus in adults was always associated with Lichen planus. The two eruptions occurred together or one followed the other. The reason why Lichen spinulosus was not often seen with Lichen planus in children was that the latter eruption was rare in children. But Dr. MacLeod showed, in a little girl, Lichen planus and Lichen spinulosus—a very good illustration of the connection between the two.

The PRESIDENT, in reply, said he agreed with Dr. Adamson's remarks—in fact he believed he was the only one who supported that gentleman's contention that Lichen spinulosus was generally Lichen planus. He (the speaker) further held that practically all cases of verrucose lichen—which this was—arose, not from the plane lesions, but from the follicular. First there was a follicular lesion, with a little horn, then a group, and the hyperkeratosis spread in between, and the horns fell out, leaving a "pumice-stone" appearance—Lichen verrucosus. The present was a very unusual verrucose lichen.

Dr. HENRY MACCORMAC showed a case of *Dercum's disease*. The patient, a married woman, aged 37 years, stated that she enjoyed good health until three years ago, when the present condition first developed. No other member of the family was similarly affected. The history was as follows: When first noticed the lesions were about the size of a small pea; they increased gradually to the dimensions

of a walnut; they were tender and painful, these sensations varying in degree from time to time. No other abnormal condition was discoverable.

While this condition did not correspond to the disease originally described by Dercum, it might with justice be placed in the more extended conception of adiposis dolorosa. Vitant's classification, which would include cases of this type, was as follows: nodular (encapsuled); diffuse, localised; and diffuse, generalised; I. P. Lyon* went even further, and with some success sought to show that the several clinical groups of fatty deposit were not only closely related but essentially identical, being only variations of a common morbid process.

One tumour about the size of a hazel-nut was removed from the forearm. Sections prepared from this consisted of pure fat; in preparations stained by Levaditi's method nerve-filaments were not found.

Dr. F. PARKES WEBER asked why this should not be called a case of ordinary multiple nodular subcutaneous lipomata, which was a relatively common condition. The lipomata in this case he would not regard as really tender, especially in view of the prevalence of rheumatoid pains in women. These tumours were often found at a stage when the ordinary fatty tissue of the body was inclined to atrophy, though this patient had not yet arrived at that stage. Tenderness in such lipomata might be due to the stretching of a nerve-filament around the tumour.

Dr. GRAHAM LITTLE deprecated so loose a classification as that suggested, which would practically merge all deposits of fat in one formless group of no clinical value.

Dr. H. W. BARBER showed *two cases of psoriasis treated by Danysz's method*. He had brought these cases of chronic psoriasis because they seemed to illustrate the effect of Danysz's method of treatment. One should be very careful before accepting the alleged value of a new treatment for psoriasis; he believed that an experience of at least five years was necessary before a definite opinion could be formed. The cases quoted in Danysz's book (*Origine, Evolution et Traitement des Maladies chroniques non-contagieuses*) were very striking, and a study of them had led him to try the method himself. Danysz regarded psoriasis, certain forms of eczema, urticaria, angio-neurotic œlema, and other non-cutaneous diseases, such as asthma, chronic

* I. P. Lyon, *Arch. Int. Med.*, 1910, vi, p. 28.

albuminuria, and many gastro-intestinal disorders, as due to a state of "immunity-anaphylaxis." There was some experimental work in support of this view, for if rabbits were injected repeatedly with minute doses of a foreign serum or bacterial protein for several weeks and were then kept under observation, they gradually developed chronic diseases of various kinds, such as arthritis, dermatosis with alopecia, paralysis, and so on. The same was true of horses used for the preparation of curative sera.

Acting on this theory Danysz attempted to counteract the anaphylactic state by giving repeated doses at short intervals of bacterial protein prepared from faecal cultures; the bacteria being killed at 70° C., the preparations were less toxic than ordinary vaccines, and could be injected daily or every other day. The method was comparable to the injection of peptone, of non-specific protein such as milk, and of food, animal, or plant proteins in the treatment of asthma.

CASE 1.—Male, aged 54 years. One sister also had psoriasis. The disease appeared in him at the age of eleven. He was in Great Ormond Street Hospital when aged thirteen, and was treated by external application of liquid tar. He was then free from the eruption for some years. At the age of twenty he came under Sir Cooper Perry's care, and was given arsenic in increasing doses. He was then much better for a period of some fifteen years. His present attack began eighteen months ago, and he became progressively worse. He came under the exhibitor's care in August. Treatment by Danysz's method was begun on October 5th. At that time there was extensive psoriasis involving chiefly the arms, legs and abdomen. He was given a course of twelve injections over a period of three weeks; this resulted in very great improvement, the patches becoming first pale and then gradually fading. After a week's rest a second course was begun, of which he had now had four injections. Only traces of the eruption now remained, and the patient stated that he felt in very much better health than before. In this case antogenous faecal vaccine was employed.

CASE 2.—Female, aged 37 years. Her grandfather had psoriasis. The eruption appeared in her at the age of twenty-six. She was under treatment for several years without any lasting benefit—in fact, she has never been really free of the disease for eleven years. He tried increasing doses of arsenic, as well as various local applications. He also gave her intramuscular injections of sulphur in oil with only

slight benefit. Treatment by Danysz's method was begun on September 30th, and she received twelve injections over a period of four weeks. The eruption disappeared rapidly, and she was now better than she had been since the commencement of the disease. In her case faecal vaccine prepared from another patient with psoriasis was used.

Dr. COPE said he had taken considerable interest in Danysz's method, through the work on asthma which he (the speaker) had been doing, and testing the skin of sensitive people. He did not think Danysz attributed the conditions named entirely to intestinal toxæmia, but he gave antigens, as other people gave peptones, to destroy any excess of antibody which might be present. Danysz treated practically every condition by this method, and these cases quickly yielded to it, especially old-standing cases of eczema. Patients with eczema stood enormous doses without harm. The results of this method must be judged by an inspection of the state of the patients that have undergone it after the lapse of some years.

Dr. S. E. DORE said he thought these cases were encouraging. He had a series of cases of psoriasis under stock vaccine treatment, but it was too early yet to report on them. He had read a commentary on this treatment by Sabouraud, who gave a very guarded opinion of its value; he said some of the cases showed a remarkable and even an apparently lasting improvement, but none of them seemed to be really cured, and in some there were no results. Experience showed that the intestinal flora of patients with psoriasis was the same as in healthy persons, and stock vaccines could be used.

The PRESIDENT said he had not tried Danysz's method in psoriasis, because, as a rule, that disease did not present great difficulty, but, on Danysz's recommendation, he tried it in a bad case of Dermatitis herpetiformis, and it did no good whatever. Sir James Galloway some time ago showed a case of psoriasis which had been cured, temporarily, by staphylococcic vaccine which had been cultivated from the patient's own scales. About a year later the eruption relapsed, and that time it failed to be benefited by staphylococcic inoculations. It was known that psoriasis was not due to staphylococcic invasion of the surface, so that in that case the staphylococcus must have been an accidental incursion.

Mr. T. P. BEDDOES showed a case of *local leishmaniasis*. The patient had a single patch of leishmaniasis. Such patches, in his opinion, healed up entirely under local treatment by a 2 per cent. antimony ointment. He agreed that intravenous injections of antimony always succeeded, but as this method was so tedious and troublesome, it was desirable to employ a simpler method if equally efficacious.

Dr. BARBER said he had treated four such cases with a 5 per cent. ointment of tartar emetic. The ointment caused a good deal of inflammatory reaction, but the sores healed up completely. Dr. Castellani, when showing a case at the last

meeting, raised the question as to whether in these cases one was dealing with a purely local disease or whether the blood-stream was invaded by the organisms. He (Dr. Barber) had one patient, an officer, who had several Baghdad boils when he was in Baghdad, and developed a fresh one while on his way home to England; this case seemed, perhaps, to support the latter view.

Dr. J. H. STOWERS said that careful consideration must be given to the site of the lesion if powerful local remedies were used. The sores on the cheek of the patient recently exhibited by him were unsuitable for strong caustics owing to their proximity to the lower eyelid. When the lesions occurred on the extremities, the question of ultimate disfigurement was of limited importance. As the specific organism existed in the blood, general as well as local remedies were needed to cure the disease.

Dr. H. C. SEMON, referring to the statement that X-rays cured these cases, spoke of two cases which Dr. Barber and he had had in France—proved microscopically to be Delhi boil—one of which was treated by X-rays, while the other simply had a little boric acid dressing. The X-ray treatment was continued six weeks, and both cleared up at about the same time. Their conclusion, therefore, was that the rays had had no effect.

Mr. BEDDOES replied that the ointment did cause a good deal of local reaction if continued, but that if given for a fortnight when there was no appearance of improvement and then omitted and the sore allowed to heal there was complete recovery. One should endeavour to determine whether all the parasites had been killed or not, and if required, another week's or fortnight's treatment could be given later.

Dr. E. G. GRAHAM LITTLE showed a case of *Schamberg's disease*. The patient was a man, aged 45 years. He had a brown to buff pigmentation of the legs in patches, the highest patch being just above the inner side of the knee on both sides. There were several patches each of the size of about 2 in. by 2½ in., roughly symmetrical between the knee and ankle. He had had this attack twelve months, but he described a similar pigmentation as having been present seven years ago. At first there were no subjective symptoms, but now there was decided itching.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

TWO CASES OF FOX-FORDYCE'S DISEASE. C. RASCH and A. KISSMEYER. (*Hospitalstidende*, No. 24, 1920.)

CASE 1.—Female, aged 33 years. The disease had persisted for ten years in the axillæ and on the pubic region, and during the later years on the areolæ mammae. It was always very itchy, but the patient was unable to state if the irritation had preceded the appearance of the skin-eruption. The lesions consisted of conical, firm, brown, perifollicular papules, from some of which hairs projected; others showed a slight umbilication, from which a drop of serum could be expressed, or were topped by a small crust. An extraordinarily intense irritation accompanied the affection, which showed no real improvement after two applications of X-rays.

CASE 2.—Female, aged 24 years. The condition had lasted for four years, was accompanied by very severe itching and had commenced two months after an abortion as a papular affection in the axillæ, on the external genitalia and areolæ mammae. The appearance and the localisation of the lesions were identical with those of Case 1, though the papules were somewhat smaller and excoriated; the skin in the areas affected showed lichenification. Blood examination revealed no eosinophilia and no definite changes. On gynæcological examination there was a posterior parametritis. The condition appeared resistant to two applications of X-rays, but some considerable improvement had followed the application of coal tar.

Microscopic examination of papules from the pubic regions of both cases showed hyperkeratosis and parakeratosis, a very pronounced acanthosis with downward prolongations of broad epithelial processes, hypertrophy of rete Malpighi most pronounced around the hair follicles and the orifices of somewhat dilated sweat-ducts, and around the vessels in corium an infiltration of round-cells with a few mast-cells and occasional plasma-cells.

Authors conclude that the condition is probably primarily a pruritus, the site of predilection favouring a secondary infection from scratching.

Reference is made to nine cases previously recorded in the literature.

W. J. O.

GASTRIC ANALYSIS IN ACNE ROSACEA. J. A. RYLE and H. W. BARBER. (*Lancet*, December 11th, 1920, p. 1195.)

DURING the past year Dr. Barber has collected a number of cases of Acne rosacea with a view to determining, if possible, the actual pathogenesis of the condition and the most satisfactory method of treatment. It has long been noticed that the appearance of the tongue in the majority of patients suffering from rosacea is characteristic: it is broad, flabby, pale in colour, and markedly indented at the edges. Believing that such features are frequently an accompaniment of hypochlorhydria, the authors prescribed the acid hydrochloric dil. B.P. in doses of 30 minims and upwards, well diluted in water, to be taken after meals or sipped during the meal. They found this treatment more successful than alkalis and bismuth before meals and ichthyol or menthol after meals.

They concluded that rosacea might be due to a deficient secretion of hydrochloric acid by the stomach. In order to test this theory cases of varying severity were selected and the gastric contents examined by the fractional method, and the results obtained seemed to confirm the conclusion already arrived at. Twelve cases were investigated. Grouping together achlorhydria and pronounced hypochlorhydria, the condition was present in 58 per cent. of the cases of *Acne rosacea*, in 20 per cent. of other dyspepsias examined, and in 10-12 per cent. healthy male subjects. Taking complete achlorhydria alone as being a more clearly defined condition, it was present in 41 per cent. of the cases of *rosacea*, in 7 per cent. of the remaining dyspepsias, and in 1.5 per cent. of healthy males. As to the factors which may precede the gastric condition, the writers are of the opinion that while the consumption of alcohol and strong tea or coffee may play a definite part, and in the course of treatment should certainly be disallowed, it is of still greater importance to remember oral and tonsillar sepsis.

S. E. D.

TREATMENT OF LEPROSY, WITH ESPECIAL REFERENCE TO SOME NEW CHAULMOOGRA-OIL DERIVATIVES. J. T. McDONALD and A. L. DEAN. (*Public Health Reports*, August, 1920, xxxv, No. 34. Abstract, *Journ. Trop. Med. and Hyg.*, 1920, xxiii, p. 290.)

In this paper the writers discuss the use in leprosy of chaulmoogra oil and its derivatives and the experiments of Sir Leonard Rogers in connection with gynocardate of soda and morrhuate of soda, and then go on to the treatment of leprosy by distilled esters of the fatty acids of chaulmoogra oil. These esters were as follows:

- (a) The ethyl ester of chaulmoogric acid.
- (b) The ethyl esters of the other fatty acids readily separating on cooling the alcoholic solution of the mixed fatty acids of chaulmoogra oil, doubtless containing a considerable amount of (a).
- (c) The ethyl esters of the fatty acids remaining in the mother liquid from the separation of the acids in (a) and (b), and yielding lead salts readily soluble in ether.
- (d) Ethyl esters of the fatty acids accompanying (c) in the alcoholic separation, but yielding lead salts not readily soluble in ether.

The esters were injected intramuscularly once a week, the injection being made in the gluteal region. The esters are thin and limpid, and can be easily injected through a needle No. 20 in size, or even smaller. The initial dose is 1 c.c., which is increased until a maximum of 3 to 5 c.c. is given according to the age and weight of the patient. A phenomenon noted in a few instances to follow the injection was that the patient was seized with a violent fit of coughing which disappeared in about five minutes. The injection produced no definite general reaction in the majority of cases, except occasionally a slight rise in temperature, and only 1 out of nearly 5000 was followed by any local disturbance, such as an abscess-formation.

The writers have also combined the chaulmoogra treatment with iodine, and found that iodine in this combination had none of the irritating action of free iodine. It was mixed with ethyl esters of chaulmoogra oil to the extent of 2 to 8 per cent. of iodine. Weekly injections were given, starting with 1 c.c., and increasing to 5 c.c. for adults. In addition the patients received capsules three

times a day containing mixed fatty acids of chaulmoogra oil carrying 5 per cent. of combined iodine.

Various accessory treatments have been employed, such as the application of a liniment consisting of ethyl esters of chaulmoogra oil, combined with 10 per cent. of iodine; sluggish ulcers and chronic eczematous-looking spots have been treated with ointments containing ammoniated mercury and salicylic acid; nodules have been caused to shrivel by painting with trichloroacetic acid; ulcers have been improved by sun-baths.

The combined ester and iodine treatment has been found also to be of benefit in nerve leprosy.

The writers arrive at the following conclusions:

1. The intramuscular injection of the ethyl esters of the fatty acids of chaulmoogra oil usually leads to rapid improvement in the clinical symptoms of leprosy. In many cases the lesions disappear, except for scars and permanent injuries, and the leprosy bacillus can no longer be demonstrated.

2. When combined with iodine, the fatty acids of chaulmoogra oil and their esters give good results; but there is no adequate experimental proof that this addition of iodine causes any increase in the effectiveness of the materials used.

3. All of the available evidence obtained from the use of fractions of the fatty acids of chaulmoogra oil indicates that the therapeutic action is due to one or more of the fatty acids of the oil, or to some as yet unidentified substance associated therewith. The various methods of fractionation hitherto employed have failed to demonstrate the active agent.

4. Although conclusive evidence is not at hand, it is probable that the oral administration of chaulmoogra oil derivatives is of minor importance compared with the injections.

5. In treating leprosy it is important to make use of all auxiliary agencies to build up and maintain bodily vigour.

6. Hypodermic injections of the ethyl esters into leprons nodules are followed by marked swelling with ultimate recession of the lesions. This is a valuable auxiliary treatment for specially resistant lesions.

7. It has been sufficiently established that chaulmoogra oil contains one or more agents which exert a marked therapeutic action in many cases of leprosy; whether or not the apparent cures are real and permanent, it is evident that it is a valuable agent in the control of the disease.

J. M. H. M.

ON THE ÆTIOLOGY AND PATHOGENESIS OF ALOPECIA AREATA. CARLO VIGNOLO-LUTATI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1919, fasc. vi. p. 401.)

THE author begins with a very complete review of the history of Alopecia areata, and discusses very fully the various theories as to its cause—parasitic, nervous, toxic, reflex, etc. He also mentions its frequent co-existence with exophthalmic goitre and vitiligo, and quotes numerous other diseases with which it has been found in association. Up to this point the article is purely historical, and a record of our knowledge up to the present time. The latter part of the paper deals with the author's own experiments, in which an attempt was made to produce the disease artificially in animals. He rubbed the back of the neck of a rabbit with 20 per cent. acetate of thallium in traumaticine twice at an interval of six days, and after twelve days the hair fell out on the region rubbed, leaving

a smooth, white patch. This confirmed the same result which the author obtained in 1905, and which was later confirmed by Nobl. In a second experiment the back of the neck of a cat was rubbed with 20 per cent. ointment of acetate of thallium. As in the rabbit, the hair fell out some days later. Pieces of skin were excised from these animals at different stages in the process, and compared histologically with pieces of scalp excised from cases of Alopecia areata at similar stages. Microscopically the changes in both the animals and human beings were identical, and from his observations the author concludes that Alopecia areata is due to a neurotrophic disturbance affecting the hair-papillæ, and that it may be due to different causes, either traumatic, toxic, or infective. The author considers that certain individuals are predisposed to the disease by having a nervous susceptibility, which is either hereditary or acquired, and that the disease may be precipitated by various exciting causes. These may be traumatic, psychological, physiological (pregnancy, menopause), or pathological (intoxications, infections). The article, which extends to over fifty pages, is accompanied by photographs of cases of Alopecia areata, microphotographs of skin sections, and a complete bibliography.

R. C. L.

DISEASES DUE TO FUNGI.

MYIASIS IN A CASE OF FAVUS WITHOUT SCUTULA. M.CARRUCCIO. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 403.)

THE author records a case of favus in a soldier. The *Achorion Schönleini* was found in the hairs and scales on the head, but there were no scutula. There were also large swellings on the scalp with crateriform openings from which seropus and larvæ were extruded on pressure. The larvæ were suitably reared by Prof. Alessandrini and developed later in the adult fly *Sarcophaga affinis*.

R. C. L.

PENICILLIUM BREVICAULE, VAR. HOMINIS SACCARDO, 1877, BRUMPT & LANGERON, 1910, IN AN AMERICAN CASE OF RINGWORM OF THE TOES. F. D. WISEMAN. (*Arch. of Derm. and Syph.*, 1920, ii, p. 703.)

IN this paper is described a case of ringworm occurring in three toe-nails on two feet in which the fungi were cultivated and studied microscopically. Mycelia and blastomyces-like spores were found in scrapings and nine different species of fungi were obtained in culture. Among the fungi a cocoa-brown penicillium was isolated (*P. brevicaule*) which forms the main subject of the paper, which deals in detail with its morphology and cultivation. It was cultivated only once out of three trials, produced no disease on injection and inoculation in animals, and was not regarded as pathogenetic. The fungus responsible for the ringworm was not described.

J. M. H. M.

NEW GROWTHS.

MOLLUSCUM CONTAGIOSUM: A CONTRIBUTION TO THE STUDY OF STRONGYLOPLASMA HOMINIS OF LIPSCHUTZ.

A. FONTANA. (*Giorn. Ital. d. Mal. Ven. e. della Pelle*, 1920, fasc. iii, p. 409.)

THE author examined cases of Molluscum contagiosum and found the *Strongyloplasma hominis* described by Lipschütz in 1907. The organism does

not stain well with aniline dyes. It is imperfectly stained with carbol-gentian violet, but the author found Levaditi's silver nitrate method gave good results. It is a minute organism like a coccus, and occurs either singly or in diplococci, or in groups of from three to ten in number. When grouped the organisms are united to each other by a faintly stained delicate filamentous bridge. In lesions near or on the genitals the author also found in the mollusca, as did Kreibich in 1912, the *Spirochaeta refringens*. *Spirochaeta pallida* was also demonstrated in some of these genital lesions, but the author considers both these spirochaetes as additional accidental contaminations, and suggests that *Mollusenum contagiosum* of the genitals may be a breeding-ground for the *Spirochaeta pallida*, which may be present without giving rise to specific manifestations. Microphotographs are given of the stronglyloplasma and the accompanying spirochaetes. R. C. L.

A CASE OF KAPOSI'S IDIOPATHIC HÆMORRHAGIC SARCOMA.

G. BERTUCCINI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. v, p. 589.)

THE author describes a case which was typical in every respect. The administration of arsenic internally produced considerable improvement. Five lesions were excised and examined microscopically, and the author concludes from an examination of these that the growth originates from the endothelium of the blood-vessels. He bases this opinion on the similarity of the cells to endothelial cells and the transition forms between the masses of cells and fully formed blood-vessels, and also on the tubular and concentric arrangement of the cells. He also mentions a change not previously referred to in such cases, viz. the marked softening which takes place in the centre of some of the nodules without any ulceration. The softened area contains serum, which continued to trickle out for some time after the lesion was punctured. R. C. L.

PATHOLOGY.

CERTAIN QUESTIONS OF THE MICROSCOPIC ANATOMY OF

THE SKIN. L. MARTINOTTI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iv, p. 594.)

(1) *A membrane of the epidermic cells.*—To demonstrate a membrane round each epidermic cell the author recommends the following procedure: (1) Fixation of the skin for some days in the following watery solution: Bichromate of magnesium (20 per cent.) 5 pints, bichromate of copper (20 per cent.) 5 pints, bichromate of lithium (10 per cent.) 10 pints, and bichromate of calcium (10 per cent.) 5 pints. A 4-5 per cent. solution of bichromate of magnesium or bichromate of lithium with 1 per cent. acetic acid can also be used. After fixation the tissue is washed in running water for 12-24 hours and the sections made either by the freezing or paraffin methods. The sections are washed first in distilled water and then put in a 1 per cent. watery solution of azocarmine for 16-36 hours. Then they are washed in distilled water and put for 30-60 seconds in saturated watery solution of picrate of ammonia, magnesium or lithium, preferably the last-named. Then they are washed, dehydrated in alcohol and mounted in balsam.

The Malpighian membrane and intercellular bridges are stained red with a tinge of yellow. Most nuclei are coloured, and eleidin is stained a bright red. It shows that between each cell is a clear space which separates the membrane of

one cell from another. There is a thickening of this membrane which corresponds with the points of junction of the cells. The author claims that it is not artificially produced, as he demonstrated previously by the silver nitrate method the existence of the same membrane.

(2) *A basement membrane of the epidermis.*—To demonstrate this the tissue is fixed in a solution of bichromate of potassium 3 per cent., acetic acid 1 per cent. The sections are cut by the freezing method or put through paraffin. They are stained with a mixture of eosin, aurantia and indulin (analogous to that of Ehrlich) for 3–5 minutes, washed in water, dehydrated with alcohol and mounted in balsam. The authors claim to have demonstrated a membrane to which the basal layer of cells are attached. This membrane binds the cells to the corium, and is composed of fibres which almost always give the reaction of connective-tissue fibres, sometimes those of elastin.

(3) *The origin of keratohyalin.*—The author uses stains of indazina, tannic acid heliotrope and clematina, and states that the keratohyalin originates chiefly from the nucleus of the epithelial cell, but also from the protoplasm in some instances. He holds that it cannot be considered as a purely nuclear product.

R. C. L.

TREATMENT.

A CONTRIBUTION TO THE TREATMENT OF CERTAIN SKIN-DISEASES WITH CARBON DIOXIDE SNOW. N. R. GARZELLA.
(*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iv, p. 545.)

THE diseases which the author found were benefited by freezing with CO₂ snow were Lupus erythematosus, carcinomata, Lupus vulgaris (to a less degree), angiomata, keloids and soft sore.

R. C. L.

GENERAL.

GENERALISED VITILIGO ASSOCIATED WITH PERNICIOUS ANÆMIA AND THE SYNDROME OF HYPERTHYROIDISM.
CATANZARO MANNINO. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1919, fasc. vi, p. 467.)

THE case was a woman, aged 28 years, who suffered from a typical pernicious anæmia, with an enlarged thyroid and symptoms of exophthalmic goitre. The skin showed extensive patches of vitiligo, which had developed with the other diseases. The patient died of an attack of paratyphoid, and a post-mortem was made. The usual changes found in pernicious anæmia were found, together with a parenchymatous hyperplasia of the thyroid, infantile uterus, and sclerosis of the sympathetic ganglia (cervical, celiac and Gasserian). The author considers that the condition was due to one cause (a toxæmia of some sort), which caused the blood changes and affected the sympathetic ganglia, producing sclerosis. This change in the sympathetic nervous system led to an alteration in the endocrine glands with symptoms of exophthalmic goitre and the vitiligo. In this case the Wassermann reaction was negative, and there was no history of syphilis, but the author is of opinion that an infection such as syphilis might cause similar lesions in the sympathetic ganglia to those found in his case.

R. C. L.

MENTAL AFFECTIONS AND HEREDITARY CUTANEOUS ANOMALIES, PARTICULARLY ICHTHYOSIS. PRELIMINARY COMMUNICATION. J. HENRICHs. (*Norsk. Mag. f. Læger.* 10, 1920.)

THE observations on which this very interesting communication is based concern seven families from Telemarken. The author's attention was first drawn to this question when he was assistant physician to the Eg asylum. He had been unable to find any references in the literature bearing on the subject. In correspondence with Prof. C. Boeck the latter, referring to the work of Wilhelm Boeck on the hereditary nature of ichthyosis, replied, "That in W. Boeck's family with hereditary ichthyosis transmitted through two centuries there had occurred ichthyosis alternating with mental affections such as idiocy. This occurrence could only rest upon an aplasia of the ectoderm, which in one case might declare itself as an anomaly of the central nervous system, in another of the epidermis as an hyperkeratosis." "In one family with a familial ichthyosis of the palms which he himself had observed, there had been cases of colour-blindness, astigmatism and dyslexia."

While V. Magnus (in *Norsk. Mag. f. Læger.*, 1917) had reported an ichthyotic family from Söndmøre, where the skin condition was apparently transmitted only through the female members and showed itself only in the males, thus resembling hæmophilia, this sex peculiarity was not found in his series from Telemarken, nor was there any regularity in their occurrence.

Family I. This was the same family recorded by W. Boeck in *Ugeskrift for Medicin og Pharmacie*, August, 1842, and covered six generations. There were 9 cases consisting of 2 mental, 5 ichthyotic and 2 mental and ichthyotic members.

Family II. In four generations were 6 cases, including 3 mental, 2 ichthyotic and 1 imbecile with ichthyosis.

Family III. In five generations were 11 mental and 5 ichthyotic members.

Family IV. This family was remotely connected with Family III. In five generations there were 2 mental, 5 ichthyotic and 2 mental ichthyotic members, including 1 suicide.

Family V included the case of Ichthyosis follicularis and dementia demonstrated by Prof. Bruusgaard at the Scandinavian derm. Congress in Christiania, 1916. This was a weak-minded woman with ichthyosis, aged 35 years, whose grandfather and great-grandmother on the mother's side had been demented.

Family VI had not yet been fully investigated. It concerned a man with ichthyosis who had two children who were idiots.

Family VII (from Sauland) were gypsies. In four generations were 1 ichthyotic, 1 mental case who hanged herself, and 2 morally defective ichthyotics. The grandmother of the case particularly examined was a "witch who told fortunes."

All the cases mentioned as being mentally affected had been either imbeciles, idiots, or demented. Several of these had been treated in asylums. As C. Boeck had written in his letter to the author, published in this article, these cases of mental affliction associated with skin-diseases are not necessarily affected to the degree of idiocy, but belong rather to the borderland cases showing a high degree of obstinacy or lacking in ideas of morality.

No definite psychical anomalies had been determined in association with other skin-diseases of which the hereditary nature has been established, such as Keratoma hereditarium (Méléda), but James Strandberg had drawn the author's atten-

tion to the occurrence of this skin condition in the African dwarfs. With regard to psoriasis it was likely that such a common affection should occur among mental patients, but H. had observed two cases in which there seemed to be some relation between the mental and skin conditions. In one case the onset of psychical crises was accompanied by a psoriasis outbreak, while in both cases the skin had cleared at the time of the mental remissions.

Leloir in 1879 had shown pathological changes of the peripheral nerves in diffuse ichthyosis, while Kören (*Norsk. Mag. f. Lægev.*, 1889) pointed out the trophoneurotic nature of local ichthyosis over a peripheral nerve distribution.

The relation of the internal secretions to cutaneous anomalies with the therapeutic effect of thyroid gland on ichthyosis, and to various neuropathic manifestations is discussed. Mention is made of hemicrania associated with ichthyosis, and of hemicrania in cases of exophthalmic goitre.

The conclusion is drawn that the occurrence of contemporary or alternating cases of mental affections and ichthyosis in the families described suggests a common pathogenesis, which may well be an alteration in the internal secretions, and is most likely an insufficiency of the thyroid gland. W. J. O.

SYPHILIS AND ULCUS MOLLE.

THE RESISTANCE (OR IMMUNITY) DEVELOPED BY THE REACTION TO SYPHILITIC INFECTION. WADE H. BROWN and LOUISE PEARCE. (*Arch. of Derm. and Syph.*, 1920, ii, p. 675.)

THE experiments which are described in this paper show that "in so far as syphilitic infections in the rabbit are concerned, the reaction which takes place at the site of inoculation tends to dominate the entire course of the infection; that, in effect, this reaction either inhibits or obviates the necessity for the development of lesions elsewhere, and, conversely, that the reduction or suppression of the reaction by the use of any means that does not exercise an equal effect on the organisms themselves, removes this control and tends to increase the occurrence of generalised lesions and the severity of the infection.

"If one is prepared to accept the infection produced in the rabbit by *Spirochæta pallida* and the reaction to infection on the part of the experimental animal as analogous in kind to those in man, these observations become of far-reaching importance and may open the way to a better understanding of many problems of human syphilis." J. M. H. M.

PROVOCATIVE REACTIONS IN THE CEREBROSPINAL FLUID IN NEUROSYPHILIS. H. C. SOLOMON and J. V. KLAUDER. (*Arch. of Derm. and Syph.*, 1920, ii, p. 678.)

IN this contribution a series of case histories is given to show "that after treatment the cerebrospinal fluid, which was negative before treatment, may become positive in all routine tests, or a weakly reacting fluid may become much stronger. This is called a provocative reaction. It may be accomplished by the intravenous or intraspinal injection of arsphenamin. This is compared to the Herxheimer reaction or the production of neurorecurrences and is considered as the laboratory analogue. The provocative reactions are shown to occur in both

the ventricular and spinal fluids. This is not a frequent phenomenon, and patients with vascular neurosyphilis with negative cerebrospinal fluids may not react in this manner. However, diagnosis may occasionally be made clear in obscure cases. In none of the cases in this series was the provocative reaction obtained with the blood serum. Despite the increase in the strength of the spinal fluid reactions, clinical improvement may result, and continued treatment may again produce a negative fluid."

J. M. H. M.

CLINICAL STUDY OF THE REACTIONS FOLLOWING THE INTRAVENOUS ADMINISTRATION OF ARSPHENAMIN IN NON-SYPHILITIC PERSONS. A. STRICKLER, assisted by H. G. MUNSON, D. M. SIDLICK and A. STRAUSS. (*Arch. of Derm. and Syph.*, 1920, ii, p. 692.)

The following is a summary of the findings in this paper:

(1) Both syphilitic and non-syphilitic patients may experience similar reactions following the intravenous injections of arsphenamin.

(2) The endotoxins, produced presumably by the rapid killing of spirochaetes in the blood-stream of syphilitic patients, play either no rôle or a very unimportant one in the causation of reactive symptoms.

(3) The percentage of reactive symptoms following intravenous injections of arsphenamin is equal in both syphilitic and non-syphilitic patients.

(4) It is the impression of the writers that the two most important factors in the production of arsphenamin reactions are (i) the patient and (ii) the medicament.

(5) Of these two factors, the medicament is far more potent in causing reactive symptoms; the untoward phenomena may be produced either by some impurity in the arsphenamin or by some chemical reaction between the arsphenamin and the chemical constituents of the blood, or both factors may be operative at the same time.

J. M. H. M.

CONTRIBUTION TO THE STUDY OF VISCERAL CONGENITAL SYPHILIS. BINDO DE VECCHI. (*Giorn. Ital. d. Mal. Ven. e. della Pelle*, 1919, fasc. vi, p. 490.)

THE author reports the post-mortem findings in a case of congenital syphilis which died twelve days after birth. He also gives a detailed account of other cases in the literature, together with a complete bibliography. His case showed sclero-gummatous lesions in the stomach, intestines and pancreas. The author attributes this rare form of lesion to direct infection with the spirochaete from the maternal tissues through the umbilical circulation.

R. C. L.

MULTIPLE SOFT SORES OF THE TONGUE. P. MINASSIAN. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iv, p. 560.)

THE patient was a man, aged 30 years, who presented four small typical soft sores on the tip and left margin of the tongue. The strepto-bacillus of Ducrey was found microscopically, and experimental inoculations from the tongue ulcers on the patient's own arm were successful. The lesions were cured in ten days by the application of pure carbolic acid. The infection was caused by contact of the tongue with the genitals of a prostitute.

R. C. L.

QUARTERLY SURVEY OF DERMATOLOGICAL LITERATURE.

ERYTHEMAS, INFLAMMATIONS, ETC.

- Acne Rosacea**, Gastric Analysis in. J. A. RYLE and H. W. BARBER. (*Lancet*, December 11th, 1920, p. 1195.)
- Acrodynia**. W. WESTON. (*Arch. of Ped.*, September, 1920, xxxvii, No. 9, p. 513.)
- Alopecia Areata**, Fifty Cases treated by Quartz Lamps. H. FOX. (*Med. Record*, November 27th, 1920, xxviii, No. 22, p. 895.)
- Burns**, Orthopædic Treatment of. A. H. HARRIGAN and S. W. BOORSTEIN. (*Ann. of Surg.*, November, 1920, No. 335, p. 616.)
- Dermatitis Dysmenorrhœica**. F. WISE and H. J. PARKHURST. (*Arch. of Derm. and Syph.*, December, 1920, ii, No. 6, p. 725.)
- Eczema**, Infantile, Relation of Food to. E. S. O'KEEFE. (*Boston Med. and Surg. Journ.*, November 11th, 1920, clxxxiii, No. 20, p. 569.)
- Erysipelas**, Treatment with Brilliant Green. JOSEPH E. ADAMS. (*Brit. Med. Journ.*, November 20th, 1920, p. 779.)
- Erythema Nodosum and Tuberculosis**, Fatal Case of. J. H. STOKES. (*Arch. of Derm. and Syph.*, January, 1921, iii, No. 1, p. 29.)
- Erythema Nodosum**, Case treated by Streptococcus Vaccine. S. A. LEVINSOHN. (*Med. Record*, November 20th, 1920, xxviii, No. 21, p. 859.)
- Fox-Fordyce's Disease**. C. RASCH. (*Proc. Danish Derm. Soc.*, October, 1919-May, 1920, p. 11.)
- Frambœsia Tropica** Contracted in France, Case of. J. F. SCHAMBERG and J. V. KLANDER. (*Arch. of Derm. and Syph.*, January, 1921, iii, No. 1, p. 49.)
- Glanders**, Human, Case of. F. H. JACOB. (*Lancet*, November 6th, 1920, p. 941.)
- Hodgkin's Disease**, Cutaneous Manifestations. H. FOX. (*Arch. of Derm. and Syph.*, p. 578.)
- Impetigo Herpetiformis** (Kaposi). C. RASCH. (*Proc. Danish Derm. Soc.*, October, 1919-May, 1920, p. 8.)
- Leishmaniasis**, Cutaneous, Clinical Types of. Z. COPE. (*Brit. Journ. Surg.*, January, 1921, viii, p. 259 [coloured plate].)
- Leprosy**, Seventy-eight Apparent Cures after Dein Derivatives of Chaulmoogra Oil. J. T. MACDONALD. (*Journ. Amer. Med. Assoc.*, November 27th, 1920, lxxv, No. 22, p. 1483.)
- Leprosy**, Treatment by Intravenous Injection of Chaulmoogra Oil. P. HARPER. (*Journ. of Trop. Med. and Hyg.*, December 1st, 1920, xxxiii, No. 23, p. 285.)
- Leprosy with Elephantiasis of Scrotum**, Case of. M. MACKENZIE. (*China Med. Journ.*, September, 1920, xxxiv, No. 5, p. 511.)
- Leprosy**, Why not yet Died Out in Norway. H. P. LIE. (*Tidsskrift for Den Norske Lægeforening*, No. 20, 1920.)
- Lichen Planus**, 179 Cases. M. JACOBS. (*Arch. of Derm. and Syph.*, November 1920, ii, p. 607.)
- Lichens and Lichenification**. M. DIND. (*Ann. de Derm. et de Syph.*, 1920, ser. 6, i, pp. 273 and 321.)

- Lupus Erythematosus**, Radium Treatment of. A. JORDAN. (*Urol. and Cut. Dis.*, October, 1920, xxiv, No. 10, p. 582.)
- Lymphatic Leukæmia**, Primary Manifestation in Skin. J. BUTLER. (*Arch. of Derm. and Syph.*, November, 1920, ii, p. 594.)
- Ochronosis**. O. JERSILD. (*Proc. Danish Derm. Soc.*, October, 1919-May, 1920, p. 50.)
- Oriental Sore**, Treatment by X-rays of. G. N. DOYLE. (*Ind. Med. Gaz.*, November, 1920, lv, No. 11, p. 410.)
- Oriental Sore**. A. W. SHEEN. (*Practitioner*, February, 1921, cvi, No. 2, p. 77.)
- Oriental Sore**, Treatment by X-rays. F. C. ORMEROD. (*Lancet*, October 30th, 1920, p. 893.)
- Pellagra Achrodynia in Young Children** (coloured plates). A. H. BYFULD. (*Amer. Journ. Dis. Child.*, November, 1920, xx, No. 5, p. 347.)
- Pellagra and the Pellagra Psychosis**. A Study of 757 Insane Egyptian Pellagrins. R. S. MILLER and AHMED CHAFICK ISMAIL. (*Lancet*, October 16th, 1920, p. 788.)
- Pityriasis Rubra Pilaris**, Case Cured by Thyroid Extract. O. L. LEVIN and E. B. SMITH. (*Arch. of Derm. and Syph.*, January, 1921, iii, No. 1, p. 40.)
- Prurigo**, Epidemic among Asiatics Introduced into Europe during the War. W. DUBREUILH. (*Ann. de Derm. et de Syph.*, 1920, ser. 6, i, p. 13.)
- Pruritus with Alopecia and Enlargement of Lymph-Glands**, Case of. A. NANTA and L. BANDRU. (*Ann. de Derm. et de Syph.*, 1920, ser. 6, i, p. 154.)
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- Purpura in Pneumococcal Infections of Young Children**. P. NOUBÉRCOURT and R. MATHIEU. (*Arch. de Med. des Enf.*, December, 1920, t. xxiii, No. 12, p. 689.)
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- Sarcoid**, Boeck-Darier, Treatment of. A. CIVATTE and P. VIGNE. (*Ann. de Derm. et de Syph.*, 1920, ser. 6, i, p. 254.)
- Saria** (Dermatitis of Cattle). H. H. CURSON. (*Vet. Journ.*, November, 1920, lxxvi, No. 11, p. 405.)
- Scleroderma**, A Possible Manifestation of Chronic Arsenic Poisoning. S. AYRES. (*Arch. of Derm. and Syph.*, December, 1920, ii, No. 6, p. 757.)
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- Strepto-Dermatitis in Relationship to Wounds**. D. W. MONTGOMERY and G. D. CULVER. (*Arch. of Derm. and Syph.*, November, 1920, ii, p. 649.)
- Tattooing of the Horse**. W. PETCHFORD. (*Vet. Journ.*, December, 1920, lxxvi, No. 12, p. 447.)
- Tuberculosis of the Lip**. E. P. ZEISLER. (*Arch. of Derm. and Syph.*, January, 1921, iii, No. 1, p. 14.)
- Ulcerated Meatus in the Circumcised Child**. J. BRENNEMANN. (*Amer. Journ. Dis. Child.*, January, 1921, xxi, No. 1, p. 38.)
- Varicella**, Anomalous Cases with Complications. I. TANKOFF. (*Méd. des Enf.*, December, 1920, tome xxiii, No. 12, p. 714.)

Varioliform Atrophic Folliculitis. L. SAVATARD. (*Arch. of Derm. and Syph.*, December, 1920, ii. No. 6. p. 743.)

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Actinomycosis, Case Treated by Methylene Blue and X-Ray. V. W. JENSEN and C. W. SCHERRY. (*Journ. Amer. Med. Assoc.*, November 27th, 1920, lxxv, No. 22, p. 1470.)

Black Spider Poisoning, Four Cases of. D. J. LOUIS. (*Journ. Amer. Med. Assoc.*, January 8th, 1921, lxxvi, No. 2, p. 99.)

Blastomycosis, Case with Brain Abscess. J. T. MOORE. (*Surg., Gyn. and Obs.*, December, 1920, xxi, No. 6, p. 590.)

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Epithelioma Developing on Lupus Erythematosus. W. G. WANDER. (*Arch. of Derm. and Syph.*, January, 1921, iii, No. 1, p. 22.)

Epithelioma of Eye, Plastic Operation after X-Rays, Case of. J. DOUGLAS. (*Ann. of Surg.*, November, 1920, No. 335, p. 637.)

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- Recurrent Fibro-Sarcoma of Skin.** H. H. M. LYLE. (*Ann. of Surg.*, November, 1920, No. 335, p. 634.)
- Rodent Ulcer of the Arm, Case of.** W. McMURRAY. (*Med. Journ. of Australia*, September 11th, 1920, ii, No. 11, p. 244.)
- Warts, High Frequency, for Removal of.** T. K. LAWLESS. (*Arch. of Derm. and Syph.*, January, 1921, iii, No. 1, p. 47.)

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- Vitiligo Vulgaris, Ætiological Relationship with Syphilis and the Nævi.** SASAMOTO. (*Jap. Journ. Derm. and Urol.*, May and August, 1920, pp. 44, 64.)

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- Radium and X-Rays, Comparative Value of.** R. TAFT. (*Urol. and Cut. Rev.*, October, 1920, xxiv, No. 10, p. 590.)
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- Congenital Syphilitic Ulcer of Buttock, Case of.** C. J. DRUECK. (*Amer. Journ. of Surg.*, November, 1920, xxxiv, p. 291.)
- Pregnancy and Latent Syphilis.** R. A. HENDRY, AMAND ROUTH and JOHN ADAMS. (*Lancet*, November 13th, 1920, p. 986.)
- Primary Syphilis on the Faucial Tonsil, Case of.** G. E. SHAMBAUGH. (*Surg. Clin. of Chicago*, December, 1920, iv, No. 6, p. 1197.)

Syphiloma Ano-Rectale, Commencing. O. JERSILD. (*Proc. Danish Derm. Soc.*, October, 1919-May, 1920, p. 23.)

Syphiloma Ano-Rectale. M. BREEN PEDERSEN. (*Proc. Danish Derm. Soc.*, October, 1919-May, 1920, p. 21.)

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Arsphenamin on Renal Function in Syphilitic Patients, Effects of. J. A. ELLIOTT and L. C. TODD. (*Arch. of Derm. and Syph.*, December, 1920, ii, No. 6, p. 699.)

Mercury Injections Studied by X-Rays. H. N. COLE, S. LITTAN and T. SOLMAN. (*Journ. Amer. Med. Assoc.*, December 4th, 1920, lxxv, No. 23, p. 1559.)

Provocative Reaction in C.S.F. in Neuro-Syphilis. H. C. SOLOMON and J. V. CLAUDE. (*Arch. of Derm. and Syph.*, December, 1920, ii, No. 6, p. 679.)

Syphilitic Infection, Resistance to. W. H. BROWN and L. PIERCE. (*Arch. of Derm. and Syph.*, December, 1920, ii, No. 6, p. 675.)

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Apparatus, 606, A Bulb in. J. H. WHITESIDE. (*Journ. of R.A.M.C.*, November, 1920, xxxv, No. 5, p. 406.)

Positive Wassermann in Non-Syphilitic Patients after Arsphenamin Treatment. A. STRICKLER, H. G. MUNSEN and D. SIDLICK. (*Journ. Amer. Med. Assoc.*, November 27th, 1920, lxxv, No. 22, p. 1488.)

Standardisation of the Treatment of Syphilis in the Navy. H. S. BURNISTON. (*Journ. Roy. Naval Med. Service*, January, 1921, vii, No. 1, p. 66.)

Syphilis Clinic, Organisation of. H. GOODMAN. (*Boston Med. and Surg. Journ.* December 9th, 1920, clxxxiii, No. 24, p. 667.)

REVIEW.

VENEREAL DISEASES.*

MR McDONAGH'S work on venereal disease, and especially on syphilis, has attracted considerable attention during the last few years, not only in this country, but also in America and on the Continent. In addition to numerous articles, he has already published several books on the subject, and in his work on the *Biology of Syphilis* has given very fully his views on its pathological aspect. To this collection he has now added a tome exceeding the others in size, and dealing mainly with the clinical aspect of the subject. He also forecasts another work on its pathology.

The first eighteen chapters are devoted to syphilis: then follow a chapter on *Ulcus molle* and eight on gonorrhoea. The last seven chapters deal with various related subjects, such as phimosis and paraphimosis, balanitis, *Condyloma acuminatum*, *Molluscum contagiosum*, *Herpes genitalis*, *Granuloma inguinale*, *Induratio penis plastica*, *Pediculosis pubis*, sexual neurasthenia, as well as venereal disease in relation to marriage, public health and malignant disease.

We should naturally expect that the author's views on the general pathology of syphilis would dominate the book, and this we find. In the first chapter on the "History of Syphilis" he is tilting at what he calls the "German syphilitic trinity," i.e. that the *Spirochæta pallida* is the sole cause of syphilis, that complete faith should be placed in the Wassermann reaction as a test for the presence of the disease, and that salvarsan directly destroys the spirochæte. His views that the spirochæte is only a phase in the life-cycle of what he calls the "*Leucocytozoon syphilitidis*," and that salvarsan acts only as an oxidising agent, and must be supplemented by other drugs of opposite action, are well known, and he now discards the term "Wassermann reaction," preferring to refer to it as the "complement-fixation test."

In this book, however, he comes forward as the champion of the clinician against the pathologist. He tells us that he feels very strongly that "the best diagnosis is a clinical and not a bacteriological one," and again that "there is only one certain way of diagnosing a sore, and that is by looking at it." This really forms the basis of his book and is a fundamental error, for the only sound method of diagnosis is to use, with the knowledge that comes from experience, *all* the means available, both clinical and pathological. Nevertheless we are grateful to the author for stressing the great importance of accurate clinical observation.

Throughout the book Mr. McDonagh has reclassified most of the lesions of syphilis, not only of the skin, but also of the other organs of the body. He has also discarded the usual nomenclature for the stages of the disease. This, of course, has been done by others also, but the author's classification is his own. The four stages that he recognises are primary, generalised, latent and recurrent. It is difficult to see any special advantage in such a classification, and it gives a false impression. The old numerical nomenclature may have its disadvantages,

* *Venereal Diseases: Their Clinical Aspect and Treatment.* By J. E. R. McDONAGH, F.R.C.S., 1920. Pp. 420. With an atlas of 106 coloured plates and 21 half-tone illustrations. London: William Heinemann (Medical Books), Ltd. Price £3 3s. net.

but it is at least non-committal, while the author's classification gives it a definite clinical significance which is not really accurate: for instance, it is now generally recognised that the disease is generalised in the primary stage even before the Wassermann reaction is positive, that a latent stage may precede what is generally known as the secondary stage, and that the secondary lesions may be recurrent.

Mr. McDonagh's clinical experience is very extensive, and therefore what he has to say on the clinical manifestations of syphilis, as well as other forms of venereal disease, must be considered very seriously. We have no quarrel with him as to his classification of clinical manifestations: any light that can be thrown upon this very confusing subject is welcome; but unfortunately he does not confine his attention to a description of these manifestations, but proceeds to explain exactly how they are produced. This leads him into fields of theory which, even if his views on the life-cycle of the spirochæte are correct, could not be proved by any method at present available.

He has devoted three chapters to syphilis of the nervous system, an outline of which he has already published in this Journal. The subject is one of great interest, but he steps in where neurologists fear to tread and gives us a cut-and-dried explanation for all the protean manifestations of neural syphilis. On the subject of visceral syphilis his views are again distinctly heterodox. To take, for example, his explanation of the albuminuria, or, as he prefers to call it, the proteinuria of early syphilis: he considers this due to an excessive filtration of protein from the blood, and not to any inflammatory process in the kidney. He apparently bases this view solely on the ground that the double-refractive lipid particles, which are found in the urine in this type of case, resemble those he finds in the blood-serum of syphilitics by means of the ultra-microscope.

It is impossible in this short review to deal with other points, but sufficient has been said to enable the reader to get a glimpse of the author's method. The book is not free from inaccuracies and even contradictions: for instance on p. 7 we are told that a primary sore should not be cauterised, while on p. 249 we are told to cauterise if we cannot excise. On p. 268, in dealing with zinc ionisation as a treatment for *Ulcus molle*, we are told to place the positive electrode under one buttock.

In a work based on a large amount of original investigation it is easy to find points to criticise, but original views require the careful consideration of all those who make a special study of these diseases, and to them this book will naturally make a special appeal. In addition, however, Mr. McDonagh has made his book an atlas of venereal diseases. The book is profusely illustrated, there being some 127 excellent plates, nearly all coloured from Mr. Sewell's brush. These are the finest collection of illustrations of venereal disease yet published in this country, and form a most valuable means of instruction for the student, and a useful work of reference to the practitioner.

Whatever criticisms we may have made of the author's text, we have none to make of the production of the work, and we desire to congratulate the publishers on the extremely handsome volume they have produced. Such productions give one a feeling of legitimate pride in the resources of our English publishing houses.

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SOME EXPERIMENTS ON THE VOLATILISATION
AND ABSORPTION OF MERCURY.

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THE efficiency of the inunction method of administering mercury is generally admitted, but opinion is not unanimous regarding the path of absorption of the drug.

It is held by some that the heat of the body volatilises the mercury and that the vapour is then absorbed by the lungs. The contrary opinion is that the metal is absorbed directly through the skin.

Whilst the author held a temporary commission in the Royal Navy he had the opportunity of making some investigations into the matter.

That mercury does volatilise and that it does produce toxic symptoms in persons who are exposed to its vapour is not disputed, but the temperature of the metal is then far above blood-heat, and the frequency and risk of poisoning is said to vary directly with the temperature.

It seemed advisable to approach the matter from two aspects: firstly, to ascertain if mercury does volatilise appreciably at blood-heat; and secondly, to inunct patients under certain conditions designed to exclude any reasonable possibility of respiratory absorption.

About 30 grm. of mercury, contained in a flat dish and very exactly weighed was placed in an incubator. The dish containing the metal was protected from dust in such a way as to offer the least possible interference with the circulation of air over it.

At the end of forty-eight hours the dish and its contents were weighed again; there was a small decrease in the fourth decimal place which might have been due to evaporation of a minute trace of water.

The experiment was repeated three or four times and always gave the same result, except on one occasion, when there was a slight increase in the fourth decimal place.

It was obvious from these results that the loss, if any, was in the neighbourhood of one ten-thousandth of a gramme—a quantity much too small to be of any therapeutic importance.

Another test was made at a later date. In each of two clean, dry evaporating dishes was placed a tiny globule of mercury, in size not quite half as big as a pin's head.

The dishes were put in the incubator and the size of the globules inspected from time to time.

Because of their extreme smallness one would have expected them to disappear entirely within a day or two if the rate of volatilisation was appreciable.

At the end of five days at blood-heat the globules were still quite unchanged in size.

The inunction of patients was then commenced. Four cases were treated in the following manner:

The patient was stripped to the waist and put in a chair close to a window. In the patient's mouth was placed one end of a stout rubber tube about 2 ft. long; the other end was led out over the window ledge and the sash closed sufficiently to just touch and grip the tube lightly.

The patient's nostrils were plugged with lint, and the inunction of the patient's back commenced by a sick-berth steward wearing rubber gloves.

The area was rubbed for twenty minutes, after which the patient dressed, and was immediately sent out into the grounds of the hospital, where a fresh breeze was blowing, for the remainder of the day.

Before turning in at night his back was washed and a clean undergarment put on.

Under these conditions all chance of vapour reaching the patient's lungs during the inunction was excluded, and it is improbable that any was inspired whilst he was moving about in the open air in a breeze.

The back was washed at night to exclude the possibility of inspiring "mercury-laden" air under the bed-clothes.

The only person likely to inspire the vapour was the steward who inuncted the four cases. It may be stated here that the steward suffered no ill effect.

The dose was 2 drms. daily, continued until signs of mercurialism appeared, when it was immediately stopped.

The four cases may now be described with the results of the treatment.

CASE 1.—McC—. Typical psoriasis, but some shotty glands in neck. No other sign of syphilis. Wassermann negative.

On ninth day patient had diarrhoea and gingivitis. Eruption and glands unaltered.

On stopping treatment the diarrhoea and gingivitis promptly cleared up.

CASE 2.—P—. Trench feet. Wassermann positive. Slight soreness of gums on seventh day. Treatment continued. Gums same, but no worse until the thirteenth day, when dose was increased to ʒiij. Two days later marked soreness of gums and teeth with some diarrhoea.

Cleared up on stopping treatment.

CASE 3.—T—. Tertiary ulceration of larynx. Wassermann positive. Rather anæmic. On tenth day aural surgeon reported that ulceration was completely healed.

In view of clinical results inunction was stopped next day. Patient's hoarseness had gone, he had gained weight, felt very well, and no longer looked anæmic.

CASE 4.—C—. Hemiplegia, probably specific. Wassermann positive. Able to get about; spastic; grip very weak. Facial muscles affected. Treatment started.

On fourth day grip was improving; on eighth day still improving; on fourteenth day grip much improved, gait much better, facial paralysis disappearing, gingivitis starting. Treatment therefore stopped.

Whilst receiving inunction the patients received no other form of treatment.

It will be seen that considering the dose given the onset of mercurialism was as rapid as one would expect after inunction in the usual way without precautions.

Incidentally it is perhaps permissible to recall an old method of inunction by smearing the soles of the feet with ointment. It was said to be effective, so if the respiratory theory is correct the sufferer was healed by a sort of mercurial miasma rising from the ground.

CONCLUSIONS.

(1) The rate of volatilisation of mercury at blood-heat is insignificant.

(2) In the inunction method of administering mercury the metal is absorbed through the skin.

ON CREEPING DISEASE.

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(Continued from p. 102.)

Creeping Disease in Japan.—On February 2nd, 1912, Prof. Dohi* reported the first case of creeping disease in Japan at the annual meeting of the Tokyo Branch of the Japan Dermatological Society. He found a parasite in the lesion. The illustrations of the stained tissue, the larva installed in it and the wax model of the lesion were published in vol. ii, p. 1005, 4th Edition of his *Dermatological Studies*.

(1) Prof. Dohi's case, 1911: The patient was a man aged 40 years. Two years before he went to South China, and while staying at Yüeh Chou he contracted dysentery. On returning to Japan he went to Shiobara for recuperation. In May, 1911, he again showed symptoms of dysentery. He returned to Tokyo on October 12th and entered a certain hospital on the 15th. Just before leaving it he suddenly felt an itching sensation in the hip. The doctor said that it was an insect sting, and applied alcohol liniment with no effect. On the 20th Dr. Shiga examined him and still found in his intestinal discharge dysentery amœbæ. At that time he had already a linear eruption on the itching portion of his buttock. Dr. Shiga referred him to Prof. Dohi for the examination of the eruption. The latter diagnosed this case as creeping disease and invited the patient to his dermatological laboratory for treatment on November 1st. The next day he made a wax model of the lesion. At the time the patient's itchy feeling was not at the extremity of the line on the shoulder, but on an apparently unaffected spot about 1 cm. distant from a nodule as large as a bean on the inner margin of the shoulder-blade. After much deliberation he determined to excise

* *Japan. Zeits. f. Derm. u. Urol.*, xii, No. 3, p. 92.

the itching part in preference to the extremity and cut it together with the small nodule in a wedge-like manner. Fortunately he was right in his judgment and could demonstrate a larva wrapped up in chitin as in a sack in the corium. After the treatment the itching entirely stopped, and the line disappeared gradually with no sign of reappearance.

As to the line, it began on the right buttock and extended obliquely above the waist. It changed its direction about eight times almost at right angles to each former course, with little curves and crooks here and there. From this point it proceeded serpiginously to the middle of the back and then went up obliquely towards the left shoulder. The line looked like tangled thread on the shoulder and the back. The exact length could not be ascertained, but as it traversed an adult's back from the right buttock to the left shoulder it was certainly very long. It took about fifteen days to form the whole line. It was red brown in colour and from 1 to 2 mm. in breadth. The line was interrupted here and there, forming dotted lines. Where its direction was changed, especially at right angles, it formed round papules as large as hemp-seeds and was raised very markedly above the skin level, but all the rest of the line was not raised.

This case belongs to the erythemato-papular form.

(2) Dr. Sakai's case*: A man, aged 32 years. He came to his hospital on November 1st, 1908, with the diagnosis of parasitic-like inflammation, and left it in three weeks completely cured. On the fifth day after he came Dr. Sakai happened to find a dark-red linear, slightly curved, irregular raised lesion on the right side of the navel. In four days the irregular line became marked in form and was perceived creeping in a definite direction. On the seventh day it abruptly struck off outwards almost at right angles and advanced $3\frac{1}{2}$ cm. in a day. For three days following no marked extension was perceived, but on the twelfth he saw a circular diffused erythema as large as a finger-end at the extending end of the line. The erythema was most vivid in the centre, and the boundary between the erythema and the healthy skin was not clear. It disappeared altogether in two days and another irregular creeping line like the first appeared instead. On the sixteenth it extended straight upward and inward, and again at its extremity another distinct erythema appeared. Here he excised a piece of skin 1.5 cm. wide and 3 cm. long at the progressing end. The appearance of the dark-red creeping line dated from only a few days after the disease began. The rate of its progression was not regular. It was looping and curving. The elevation and size of the line was generally uniform. But here and there were somewhat thick, knotty spots. The colour and elevation were most marked in the extending end of the line but faded as it neared the beginning. The most remarkable feature was that now and then the extremity of the progressing part showed a pervading erythema, and that when it ceased brought a curving line in its place. Surveying the whole lesion one noticed that the line was not exactly continuous, but gave an appearance of interruptions. The whole length of the line was 55 cm. As a subjective symptom the patient felt pruritus in the progressing part. No parasite was found, nor was any histological investigation made. This case belongs to the erythemato-papular form.

* *Japan. Zeits. f. Derm. u. Urol.*, 1914, Bd. xiv, p. 1035.

(3) Dr. Kato's case*: A woman, aged 20 years. She lived near the city of Nagoya and never travelled. On October 17th, 1916, she felt a sudden itchy sensation below the left nipple, and afterwards a red ridge-like line as thin as thread began to extend slowly. There was one line on the left side which turned back to the beginning part, and many short serpiginous lines on the right. The new ends were bright red, from the middle to the beginning dark red, and the very beginning was fading. He excised a wedge-like piece of skin from the bright red portion at the extremity, made a series of sections and examined them, but could not detect the parasite. After excision a new line about 6 mm. appeared further below the original lesion. This belongs to the papular form.

(4) Dr. Sakurane and Dr. Yamada's case:† A man, aged 24 years, who was a resident in Osaka. On November 13th, 1916, he had a small red itchy swelling below the left false rib. From that spot downward a red line gradually made its appearance, and turning to the right reached the centre line, then going serpiginously upward and to the left reached the left abdomen. On December 12th, when it was first examined, the extending end on the left abdomen for about $2\frac{1}{2}$ cm. was red and the rest remained as a dark line. When it was examined again on the morrow the line had proceeded 1 cm. to the left. They excised the lesion along with unaffected skin about 1 cm. long at the extending end and sewed up the spot without recurrence of the disease. They examined the sections made from the excised skin but could not find the parasite. This belongs to the erythematous form.

(5) Dr. Murakami's case‡: A man, aged 56 years. January 18th, 1917, he felt an itching sensation below the right nipple. On the 19th, while taking a bath, he noticed a dark red linear elevation on the itchy spot but did not care. On the 20th the linear elevation took a somewhat crescent shape and proceeded inward. On the 22nd, as it still continued its serpentine progression, he consulted a doctor. When it was first examined an elevated line, starting at a spot about 10 cm. below and about 5 cm. outward of the right nipple, proceeded semicircularly inwards and downwards, making a small, imperfect oval shape. It looped on itself several times inwards and downwards, and at a spot about 2 cm. inwards from the breast line began to creep downward and outward, and then running obliquely upward almost in a straight line ended in an oval-shaped diffused erythema as large as a finger-end. The erythema faded gradually as it neared the edge, till it merged in the surrounding healthy skin. The elevation was as big as a wax match in diameter and generally uniform, but it decreased in the beginning part, being more or less flattened. The line had small knotty swellings here and there, which in some places gave the appearance of chained beads. The general colour was reddish-brown, but in the beginning part had faded into dark brown. It was brighter in the new portion. He could not excise the spot. This belongs to the erythematopapular form.

The more than forty cases that have hitherto been reported as that of creeping diseases are various in their clinical symptoms, but coincide in that they cause a linear eruption. They can be classified into—

* *Chuogaku Zushi*, December, 1916, No. 130, p. 107.

† *Japan. Zeits. f. Derm. u. Urol.*, 1917, Bd. xvii, p. 460.

‡ *Ibid.*, 1917, Bd. xvii, p. 459.

1. Cases in which the line is erythematous: Lee, Crocker, Topsant, Sakurane.

2. Cases in which the line is erythematopapular: Neumann, Kaposi, Rille, Harlingen (second case), Lenglet and Delaney, Kengsep, Dohi, Sakai, Murakami.

3. Cases in which the line is papular: Samson, Kuschner, Boas, Howard Fox, Kato.

4. Cases in which the line is erythematopapulovesicular: Ehrmann, Schmid, Stelwagon (second case.)

5. Cases in which the line is papulovesicular: Rawnitzky, Gosman (first case.)

6. Cases in which the line is erythematovesicular: Berenger and Forrard, Hamburger, Stelwagon (first case), Gosman (second case), Tamura.

7. Cases in which the line is vesicular: Harlingen (first and third cases), Hutchin (third case), Haase.

I propose for convenience sake to adopt the following three main divisions:

(1) Erythematous form.

(2) Papular form.

(3) Vesicular form.

And since various forms exist, owing, as Kaposi said, to the difference of the individual skin susceptibility and reaction, I propose also to use, if necessary, combinations of these three designations in diagnosing different types of creeping disease. Thus my own case belongs to the erythematovesicular form.

F. ON THE HISTOLOGY.

The reports concerning creeping disease are less than fifty, and those in which any histological investigation was made number only nine including mine. In Lee's first case, which was the first case known in the world, its histological result was reported by Dickinson, Fox and Duckworth. They said that in the sections the line corresponded to three or four hypertrophied papillæ. The rete and the lower portion of the epidermis were crowded by innumerable round granules of sharp contour, all of which were of about the same size, viz. $\frac{1}{2000}$ in. These granules resembled very much vegetable spores,

but they were no more than metamorphosed cells. Most of them contained nothing; a few had round or semilunar nuclei in the centre. Perhaps the epithelial cells, having perished on account of cystic degeneration in the interior, changed into the above-mentioned granules. Round the extending papilla they also thronged very closely here and there, so that the original state of the tissue could not be ascertained. They regarded all this as an abnormal change of the cutaneous epithelium in the line of the eruption.

Neumann's case was subjected to a very minute histological investigation by Rille and Riecke, and its result was published in Mracek's handbook for skin-diseases. The skin in question was excised three times at different moments. The burrow in the epidermis was a chief histological change. In some sections there were burrows. Under a low power lens the burrows appeared to lie between the horny and the Malpighian layers, but on closer view the upper boundary of the tunnel consisted of the horny layer and very flat, dark granular cells. Sometimes the burrow lay on the uppermost portion of the rete Malpighii and sometimes both its roof and floor were made of the horny layer. The floor and two sides were composed of cells of the stratum germinativum. Round the burrow for many rows the epithelial cells were swollen and the space between them was enlarged. The remaining cells of the stratum germinativum and the basal layer had the normal configuration. No wandering cells were to be seen in the epithelial layer.

The contents of the passage-ways consisted of refracting formless substance and numerous small round granules in it. These granules were very easily stained, unequal in size and shape, angular, long or oval. There was no order in the arrangement. No doubt they were of cell derivation—a diffuse parenchymatous degeneration of cells with granular destruction.

In the contents of the burrow there could be seen no trace of the discharge or egg of a parasite. The papillary layer generally remained in its ordinary state. No change in the corium. The abundance of nuclei was physiologically natural in a child of two years. In some place where no burrow existed there was an inflammatory change. Close to the capillaries of the papillæ and the uppermost layer of the corium, round the blood-vessels and sebaceous glands and also round the sweat-glands and blood-vessels in the

deepest portion, there was the infiltration of round-cells. Sometimes the inflammation was very severe.

Lenglet and Delaney.—They excised a marked portion of the line, made a number of sections and stained them variously. They examined them first with a low power lens, and said that the burrow was penetrating the epithelial layer. The horny layer which formed the upper wall of the burrow remained almost unaffected. Sometimes it was destroyed by the exudation which filled the burrow. The walls of the burrow were made of the perforated epithelial layer. The diameter of the burrow measured from $\frac{1}{2}$ to $\frac{1}{4}$ mm. on the average. But there was a smaller secondary burrow here and there, which had clearly defined walls, and finally joined the main track or was separated from it by a few cells. In many places of the sections there were excoriations of the horny and the Malpighian layers. The papillary layer immediately below the burrow showed a marked infiltration of lymphatic cells. With a high power lens one could see that two or three cells separated from the walls of the burrow and collapsed on the passage-way on account of the expansion of the space between cells. In some places there were left only the nuclei of the cells which seemed to have been digested. Many wandering cells stood among the epithelial cells. They were connected with the cellular infiltration around the blood-vessels in the corium.

Some of the cells in the burrow as well as the infiltrated cells were eosinophile cells and the others were a very few lymphatic cells, multinucleate white corpuscles, degenerated epithelial cells. In no place was the contents of the burrow in contact with the papillæ. Nor could any place be seen where the burrow extended down to the corium and introduced a larva there as some observer asserted.

Kengsep.—The excised skin was made into consecutive sections at the Pathological Laboratory in Dorpat, and their examination showed that the change was only in the epithelial layer.

Hamburger.—He excised a small piece of the diseased skin and made a microscopic examination. He could find nothing remarkable except an acute inflammation.

Knowles.—He excised the whole lesion and made sections of it. He said that the result of his examination closely coincided with the report by Rille and Riecke, except that he found the parasite in the burrow.

Whitehouse.—Dr. MacKee made a histological study of Whitehouse's case, and found that the burrow was not only between the horny and granular layers, but that it extended into the rete for a considerable distance, in places almost to the basal layer.

Dohi.—He made a biopsy with a view to remedy, so that the excised portion was chiefly that in which the patient felt itching at the time—that is to say, the part which appeared unaffected. Consequently, though he could demonstrate in the sections made from this the existence of a larva wrapped up in chitin, he could not perceive any histological change in the epithelial layer. In the middle part of the transection of the larva he perceived two tube-like objects piled one on the other. Around the outer walls of the creature there was a marked infiltration of round-cells, in which he noticed here and there accumulations of eosinophile cells, and also some multinucleate cells. The cellular infiltration round the parasite was stained more remarkably than the other parts. The whole being oval in shape and having the parasite in the centre made what is called "*Fremdkörper tubercle*." Round this tubercle there was, over a considerable area, infiltration of round-cells in the spaces between blood-vessels and lymphatic glands. They formed various-sized threads and made a network. Round the sweat-glands there was also an infiltration of round-cells. But in the latter the density of cellular accumulation was less than that round the parasite. In the papillary layer there was cellular infiltration along the capillaries.

The degenerated cells, like vegetable spores in Lee's case, the granules of cell derivation easily coloured in Neumann's case and the so-called digested nuclei in Lenglet's case are perhaps identical with the particles which, like nuclei, were well coloured with hæmatoxylin in my case. They must be the nuclei of those epithelial and other cells which have passed through the digestive tube of the creature, as Lenglet and Delaney supposed, and as I affirm with stronger authority.

Except Prof. Dohi's and Topsant's cases all the reports agree in that the chief change lies in the epithelial layer, and most of them state clearly the existence of the tunnel there. Only in Lee's case its existence is obscure, but as it is stated that granules like vegetable spores were very dense only in the epithelial layer, the tunnel must have been in the same layer.

These are the substance of all the histological reports that have

ever been published. According to them the seat of the burrow is in the corium as well as the cuticle—that is to say, part of the corium has a share in forming the burrow.

The clinical change, however, is not different from that which has been reported of the other cases. In Prof. Dohi's case the parasite lay exclusively in the corium. How it made its way there, or whether it crept through the corium from the first and yet showed a red line externally as a clinical symptom, we are unable to ascertain. Prof. Dohi himself explains this phenomenon as follows: "The larva has probably run through the whole tunnel in the epithelial layer, getting unintentionally on the way into a hair-follicle. The fact that the inflamed cellular infiltration was to be observed in the corium only round the seat of the larva (see drawing in Dohi's *Text-book of Dermatology*, vol. ii) proves that the larva has fallen into the hair-follicle, from which it struggled to get out. I could notice no reddening of the skin at the spot under which the larva occurred. In my opinion this fact was caused partly by the short stay there of the animalcule, but especially by its deeper position. Along the whole course of the parasite where the red, long, crooked line was to be seen on the skin of the patient, there was neither pain nor bleeding, but only itching. From these facts I conclude that the parasite had taken its course exclusively in the epithelial layer."

But so long as the nature of the parasite remains doubtful, we may assume it was a kind of creature which causes creeping disease by creeping through the corium: indeed, we have Topsant's case to confirm this.

That there is a larva of a fly called *Hypoderma vobis* which creeps in the hypodermic tissue of an ox is a well-known fact among veterinarians and entomologists. Topsant's case, in which such a *Hypoderma vobis* made a subcutaneous burrow in the human skin and produced a red line on the surface, is a strong proof that a parasite exists which makes such subcutaneous burrow. My case resembles anatomically those of Neumann and Knowles, except in that the floor of the tunnel in mine is made of the corium, though the upper and side boundaries are made of the horny layers as in most creeping diseases. Such a slight difference is not powerful enough to exclude my case from among the category of creeping disease. Besides, my case is from the anatomical point of view a middle type between those which only

cause epithelial changes and those in which the corium or the hypodermic tissue is affected.

G.—THE CAUSE OF THE DISEASE.

As to the cause of creeping disease, Samson,* a Russian, was the first who reported the presence of a parasitic animalcule. He said that in most cases there was much difficulty in finding the larva, for it was not only very small, but also it lay some 0·5 cm. ahead of the perceptible extremity of the burrow, where the skin was still unaffected. He also stated that the larva was generally 1 mm. long, and that any zoological book would show its being the larva of the *Gastrophilus*. Accordingly he quoted the picture of the *Gastrophilus* larva given in Brehm's *Tierleben*. He gave no minute description about his own larva, and Brehm's illustration was very imperfect, so that much doubt was entertained about its being the *Gastrophilus* larva.

The second report about the parasite was made by Sokolow. He gave a picture of his larva, and said that it measured 1 mm. in length, consisted of ten segments, had a number of big hooklets, and two suckers on the head, had a small hooklet at the end of each segment and two club-like processes at the tail end, and that two horizontal tubes and other organs were visible in the inside.

Sokolow's description added to the likelihood that the parasite of creeping disease was the *Gastrophilus* larva. What he found was a *Gastrophilus* larva in its earlier stage. As to its species, he decided that it belonged to the *Gastrophilus hæmorrhoidalis* or *G. pecorum*, from the fact that black nits could be found adherent to the hairs in the neighbourhood of the burrow, for these two species attach their nits to the hairs of the victim. But since Sokolow's time no such black nits have been found in connection with creeping disease. In spite of the fact that the *Gastrophilus* larva was not found in the skin but only in the stomach and duodenum of a horse, Samson tried to prove that it affected the human skin by quoting a case in Siberia in which the larva was found in a man's stomach.

Such being the case, the above two reports had been subjected to much criticism, till the appearance of a report in 1907 by Prof. Boas, a celebrated Danish zoologist. Prof. Boas made a minute study of the parasite which Dr. Pvortrup found in a creeping-disease

* *Arch. f. Derm. u. Syph.*, Bd. xli, p. 367.

patient, and described it as follows: "The larva is about 1 mm. long, generally slender, thickest in front of the central portion and very thin at the tail, where it is divided into two. It has a number of black scales and thorny hooks. They are mostly arranged round the body in ring-like fashion. Each ring is formed of scales, and under each scale, between it and the next one, there are two small hooks, so that the hooklets are twice as many as the scales. Some of the rear rings have no hooklets, or very small ones. In the front and middle rings they are very regular. The rings are nine in number. Besides, there are a great number of black hooks different in size at the end of the body round the mouth. They crowd together parallel to the long axis. The trachea opens at the end of the body in two processes, the openings of which are each divided by a bridge. Inside one can see at the head-end the larynx skeleton with its two hooks, which project from among the hooks on the head. It is clear that this larva belongs to the same species as that which was found by the Russian observer. The larva of the *Gastrophilus* lives in the stomach and duodenum of the horse, so that the eggs laid on the human skin, when hatched, will go into it."

Prof. Boas pointed out the two following features as evidence of his larva being a *Gastrophilus* larva:

(1) Among the zoological specimens belonging to the veterinary and agricultural school at Copenhagen there was a *Gastrophilus* larva 3 mm. in length, which was found in a horse's tongue. The larva was not much larger than the parasite of creeping disease. In this case, moreover, it made a burrow under the cuticle of the tongue and made the animal ill for a long time. In many respects it was nearly the same as the one obtained from the creeping disease.

(2) According to Guyot* the *Gastrophilus* larva just out of its egg was $1\frac{1}{4}$ mm. long, and in all the other respects his description entirely corresponded to that of Prof. Boas. Besides, Guyot investigated his larva quite independently from creeping disease, and Prof. Boas was surprised to find that his description, which had been made in the utter ignorance of Guyot's, coincided completely with the latter.

The fourth report is that by Wosstrikow and Bogrow. One parasite was found, which measured 1 mm. in length. The head was black, the main body was white. It gave active wavy motions. The

* *Arch. de Parasitol.*, iv, p, 184.

entomological investigation of it was entrusted to Prof. Koschewnikow, according to whose opinion the parasite was a very young *Gastrophilus* larva in the first stage of its growth. Considering its general shape and the number of its hooks on the head and body, it was not of the same species as the ordinary big fly usually found in a horse's stomach, *i. e.* *Gastrophilus equi* or *intestinalis*, but belonged to a species similar to the *Gastrophilus hæmorrhoidalis*. Prof. Boas said that if the parasite should be proved to be a *Gastrophilus* larva, it would make no great difference to what species it belonged. Exactly. Until the appearance of the two reports by Profs. Boas, Wosstrikow and Bogrow there had been much doubt about its being the *Gastrophilus* larva.

The fifth and sixth reports appeared in America. Rudell in 1913 and Cates in 1914 each discovered a parasite. They neglected, however, minute zoological description, and only publishing a photograph of the creature assumed it to be a *Gastrophilus* larva. On the whole all the above-mentioned reports agree in that the parasite is a *Gastrophilus* larva. As a seventh report I will add my case, in which, however, the parasite is not a *Gastrophilus*. It is a *Gnathostoma*. Since such a new parasite has been found as the causative creature of creeping disease we may conclude that the same disease is caused by more than two kinds of parasites. If this is the case, then Topsant's case, clinically speaking, may properly be regarded as one of creeping disease.

On this point Wosstrikow and Bogrow had prophesied the existence of various causative creatures in 1908 from the marked difference between their case and Neumann's, in spite of the general belief that the parasite was confined to the *Gastrophilus* larva, for they attributed the variety of creeping disease to the difference of the stimulus.

Since that time ten years have passed and no less than sixteen reports have been published; still no other parasite has been found save the *Gastrophilus* larva.

Now in a case which is clinically proved to be a distinct case of creeping disease, I have found a new parasite and fulfilled Wosstrikow's prophecy. Moreover, now that a middle type between Topsant's and all the other known cases of creeping disease has been histologically proved to exist, *Hypoderma vobis* may well be considered a causative agent of creeping disease.

On the subjective symptoms of creeping disease.—In almost all cases

of creeping disease there is as a subjective symptom an itching sensation, and its locality coincides with the progress of the parasite. In my case, however, the patient felt pain instead of itching as the creature proceeded. In Topsant's case it is reported that the patient felt very severe pain and even fainted from it sometimes. Such severity of pain, being contrary to the ordinary experiences in creeping disease, was one of the reasons why his case was not regarded as creeping disease. The parasite in my case is ten times as long as an ordinary *Gastrophilus* of creeping disease. While the *Gastrophilus* has only nine rings of hooks in all, the *Gnathostoma* has eight on the head only. In the main body the *Gnathostoma* has a great many closely arranged hooks on the fore half. In number and size they surpass those of the *Gastrophilus*. This accounts for the fact that pain, not mere itching, was felt by the patient. In subjective symptoms, too, my case forms a middle type between Topsant's case and all the other known cases.

On the name of the disease.—The disease now known under the name of "creeping disease" was first called "creeping eruption" by Dr. Lee. This is the reason why in most subsequent reports published in England and in America the latter name has been adopted. Both Neumann and Ehrmann preferred the name "creeping disease." Kaposi, in his report of 1898, insisted upon the propriety of using the name "hyponomoderma." Skabies also objected to the name of "creeping disease" on the ground of its being "hyponomoderma." Kumborg called it "Dermatomyiasis linealis asteosa," but since a causative larva besides the larva of a fly has been discovered this name is not to be used. Kengsep, after criticising Kaposi's designation, proposed the name "Epidermitis linealis migrans" as scientifically most appropriate from the standpoint of pathological anatomy. Such a mistake was due to the fact that at that time the instance of Topsant was not considered a creeping disease, and no case had been found as yet in which the corium was affected as in my case. Rille called it "Dermatitis linealis migrans" or "Linea migrans." The name "Larva migrans" is often used, but it does not suit my case because what I discovered is not a larva. On the whole I think the name of "creeping disease" most suitable.

The definition of creeping disease.—From the foregoing studies I want to define creeping disease as follows:

Creeping disease is a skin-affection in which an erythematous, papular or vesicular line appears on the surface of the skin and extends day by day. In most cases the line takes a serpiginous course, sometimes branching off. It is accompanied by the symptom of itching or pain. The disease is due to a *Gastrophilus* larva, or sometimes *Hypoderma robis*, creeping either in the epidermis or in the corium or between the two.

In creeping disease new kinds of causative parasites will be found some day. All the three parasites already found, *Gastrophilus*, *Gnathostoma* and *Hypoderma robis*, invariably have a ring of hooks on the body, and the points of these hooks are turned to the tail, so that they cannot easily go backward when creeping through the skin.

I venture to assume that the new parasites which are expected in the future will be possessed of similar lines of hooks and the subjective symptoms will depend on their size.

Since writing the above Dr. Yutaka Ikegami,* from Japan, has extricated a parasite in the Amoi Hospital (China) from the progressing extremity of the typical erythemato-papular serpentine line of creeping disease of 21 cm. length, extending in the direction from the umbilical region to the right inguinal thorax. In his case the causative parasite has been thought to be *Echinorhynchus sphaerocephalus*, and he refers to the animalcule as follows: "The body of the parasite is cylindrical, of brownish yellow, covered with a cuticle. Below the cuticular covering are to be seen fine, circularly-running muscular fibres. The length of the body is 2 mm., its breadth 0.4 mm. On the head there are five rows of hooks, in each row 15-25 hooks, the pointed ends of which are turned towards the tail. Below the head there is the Rüsselscheibe, on which there are to be distinguished granular, dark-coloured small rods which I thought to be the Lemniscus. The length of it is one-quarter of the whole body. On the end of it, in the midst of the body, hangs a spindle-shaped cord, being most probably the sexual organ. The tail end of the body shows the bursa copulatrix."

The author remarks that if there was an intestinal canal, one could state forthwith that the parasite was a kind of *Gnathostoma*. But

* *Formosa Medical Journal*, 1919, No. 204.

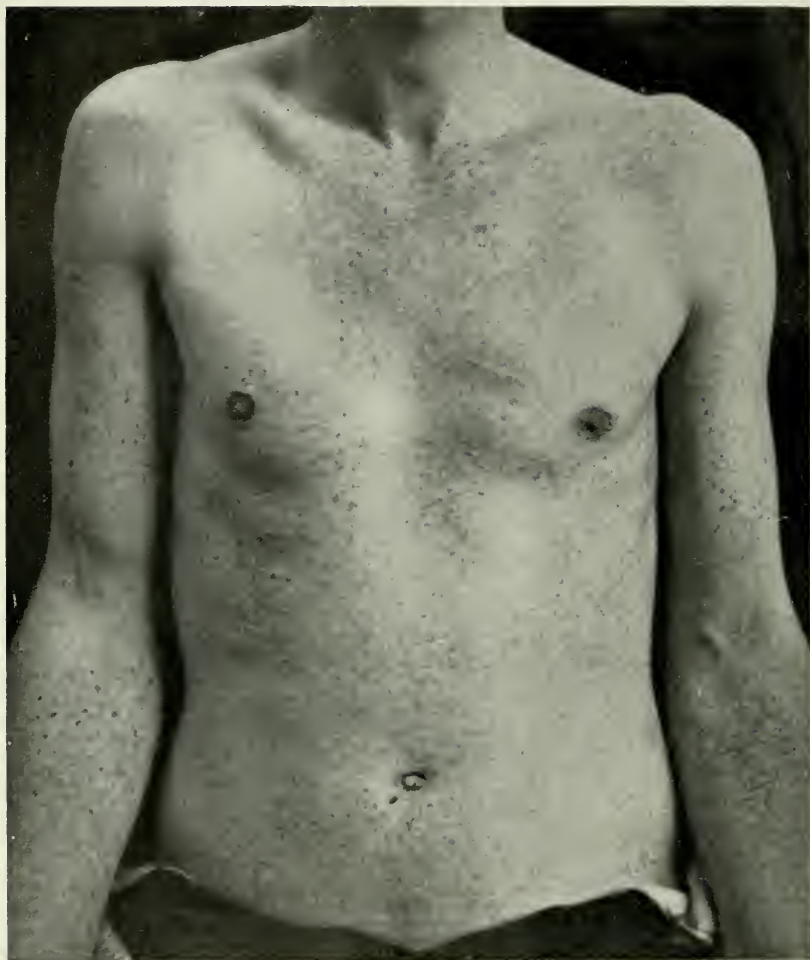


Photo by Mr. J. Manby.

FIG. 1.—Shows factitious urticaria to right of left nipple.

TO ILLUSTRATE DR. WALLACE BEATTY'S CASE OF ADULT
URTICARIA PIGMENTOSA.

unfortunately, in consideration of the very primitive development of the animalcule, he could not verify such an organ in its body.

He showed his preparation to Prof. Jijima, zoologist in Tokio, who noticed a questionable intestinal canal, but was unable to decide whether the animalcule was to be identified with the *Gnathostoma spinigerum*, Owen (Leiper). The author diagnosed the extracted parasite as *Echinorhynchus sphærocephalus*, principally because he could not confirm the intestinal canal.

CLINICAL NOTE.

A CASE OF ADULT URTICARIA PIGMENTOSA.

WALLACE BEATTY, M.D.,

Physician to the Adelaide Hospital, Hon. Professor of Dermatology, Trinity College, Dublin.

On September 19th, 1919, a gentleman, aged 32 years, healthy and strong, consulted me for an eruption of ten years' standing, which affected the trunk copiously and the extremities abundantly also.

The history he gave was: He was always healthy; never syphilis. Ten years previously an eruption appeared on the upper part of the chest anteriorly, and gradually spread over trunk generally, front and back, and on to extremities. It caused no irritation: it worried him only on account of its unsightliness. The eruption affected the trunk, back and front, very copiously, the lower part of the neck and upper extremities down to the wrist, the inner part of the thighs

abundantly, and in a scattered way the rest of the thighs, and, sparingly, the legs. The face and scalp, the hands and feet were spared. The lesions were small circular macules and papules 3 to 4 mm. in diameter: The majority were not elevated (*i.e.* macules); many, however, were slightly and some distinctly elevated (*i.e.* papules). Some were brownish in colour not altered by pressure; the majority were red. Pressure removed the colour in some completely, in others there remained a slight brown or yellowish stain. This was specially observable on the forearms.



FIG. 2.—Shows lesions on left forearm.

On the trunk the lesions were very closely set, separated by variable distances—3 or 4 mm. or less. In some places there were wider spaces. As to arrangement of the lesions they were for most part disseminated, but in places there were imperfect rings, and over the lateral parts of the chest and in a few places elsewhere shorter and longer lines of spots were observed, these lines made up of two or more papules.

I was greatly puzzled as to the nature of this lasting eruption. I asked Dr. Walter Smith to see the patient. He wrote: "Interesting and rare. I have never seen the like. The eruption is accurately symmetrical, and tends to follow the lines of the ribs. Some of the spots are distinctly elevated and leave a slight yellow pigmentation under glass pressure."

On further study of the case I came to the conclusion that it might be "adult Urticaria pigmentosa" especially as factitious urticaria

could be easily provoked by friction or the stroke of the nail. I told the patient that a biopsy would probably clear up the diagnosis. He readily consented. Dr. Gunn excised a small piece of skin comprising two or three lesions. On microscopic examination closely set mast-cells were found in the corium.

The patient came to see me on January 17th, 1921. The eruption remained as abundant as before and factitious urticaria was marked. The subjective sensations were almost *nil*. After a bath, when urticarial elevations arose, he felt a subdued itching, but very slight and not lasting.

Dr. Speares examined the blood for me and found it perfectly normal.

His kidneys were healthy.

The diagnosis of Urticaria pigmentosa I based on the following facts :

- (1) Some spots were pigmented.
- (2) The chronicity of the eruption.
- (3) The ready production of factitious urticaria.
- (4) The closely set mast-cells in the cutis.

In Darier's *Précis de Dermatologie* I find this note : " One teaches generally that Urticaria pigmentosa begins a short time after birth, exceptionally after the first year, that it disappears at the end of eight or ten years by progressive effacement, and would be then very rare in the adult. This is often exact. I have shown, however, in 1905 at the French Society of Dermatology that the affection can last indefinitely, that one can see it appear at puberty or even at mature age, that it is sometimes a family affection."

In February, 1920, Dr. Maurice Drummond very kindly asked me to see a man affected in a similar way to the case I have just described, but much more severely. The eruption had persisted for many years. The microscopic examination of a lesion showed an abundance of mast-cells in the corium. Dr. Drummond has recorded his case in the *Transactions of the Royal Academy of Medicine in Ireland*, 1920.

ROYAL SOCIETY OF MEDICINE.

DERMATOLOGICAL SECTION.

MEETING held on December 16th, 1920, Dr. ARTHUR WHITFIELD, President of the Section, in the Chair.

Mr. H. S. SOUTTAR showed *four cases after operation for extensive hairy moles of the face*. The moles were very extensive, involving in each case the whole of the cheek and the lower eyelid. In two cases they extended on to the forehead. The replacement of such moles by Thiersch grafts would only result in the production of a scar, and the problem which had to be faced was that of substituting an area of whole skin from elsewhere. The arm-flap method was adopted. A large flap was turned up from the shoulder, using the outer part as a pedicle, the arm was brought across the head, which was turned toward the flap, and the flap was sutured into position with the greatest accuracy. The flap was in each case cut of considerably greater area than that of the skin to be replaced, to allow for shrinkage and to avoid a possible ectropion due to traction on the eyelid. It might have been better to have left the eyelid untouched, so difficult was it to avoid a troublesome ectropion if this part of the mole was removed. The pigment in the eyelid could be removed by other methods. The arm was kept bound over the head for a week, and after that the pedicle was divided and the suture completed.

It would be noted how exactly the grafted skin took the qualities of the normal skin of the part. To obtain this result the subcutaneous musculature must not be interfered with. If this was preserved the skin developed the normal folds, and even the actual texture of the normal skin. The cutaneous sensation became perfect within two years, and within about the same time the neurovascular control was regained, with the result that blushing and blanching took place on both sides in an exactly similar manner. Not only so, but they were similarly distributed, and the malar flush again becomes noticeable. It was a curious and useful feature that in all the cases with which he had so far dealt, the lower margin of the mole had followed the naso-labial fold, in which a scar could be more easily concealed.

The arm-flap method gave satisfactory results in children, to whom the prolonged restraint did not seem to be very irksome. In adults it would probably be better to adopt the newer method of tubulation.

Mr. H. D. GILLIES showed a *case after operation for hairy mole of the face*. The patient was a woman, aged 28 years. A large hairy mole occupied the area from the left angle of the mouth over the cheek and mandible, and down on the submaxillary region on the left side. Greatest length 4 in., greatest breadth 3 in. During the last six years it had had considerable treatment with carbon-dioxide snow, electrolysis, and liquid air. The patient had had to shave every morning, and had attempted to mask the deformity by means of grease paint. The total disfigurement, even when masked, was such as to render her life extremely unhappy.

On November 24th, 1920, the mole was removed by excision, and replaced by an original pedicle flap from the forehead. The base of the pedicle was on the left temporal artery. The forehead flap was cut exactly to shape of the excised mole, except that there was not enough available forehead to fill the raw area caused by the excision in the submaxillary region. This was closed by advancement of the neck skin. On December 5th, 1920, the pedicle was returned to the forehead, and the raw area on the forehead pressure-Thiersch-grafted.

When shown at the meeting a slight recent scar was obvious round the grafted portion. There was no deformity of the angle of the mouth. The colour of the new skin was good, and expression lines were already developing in it. The forehead scar was entirely masked by the dressing of the hair. Further cosmetic surgery was contemplated on the more noticeable portions of the scar.

It was very interesting to compare the splendid result achieved by Mr. Souttar, using the arm pedicle flap for an extensive mole. His (Mr. Gillies') own case was a smaller one, and in an accessible position, except for the difficulty at the angle of the mouth. For that he had used an original development of the method he had been employing in connection with noses, employing the forehead skin for replacement, as that was much nearer the kind of skin on the cheek than any other.

Dr. MACLEOD said that some twenty years ago in Vienna, Prof. Lang used to do a somewhat similar operation for the treatment of lupus of the face. He excised the lupus, going well down to the subcutaneous tissue; he then mapped out a piece of skin from the thigh about $\frac{1}{4}$ in. larger than the lupus patch excised, to allow for shrinkage, and sutured it in position on the face. So far as the removal of the lupus was concerned he got fairly good results.

The PRESIDENT said that cases of the kind were the despair of the skin-

physician. He saw Mr. Gillies' case several years ago; Dr. Colcott Fox showed the patient to Dr. Wickham, of Paris, to see if anything could be done for her by radium. Dr. Wickham's answer was in the negative. Both Dr. Fox and he (the President) treated her for some time by freezing, which proved, however, quite unavailing. Then they began to destroy the hair slowly by electrolysis, but this also was hopeless, and the patient drifted away, and, by good luck, came into the hands of Mr. Gillies. The result was, cosmetically, extraordinarily good, as it also was in Mr. Souttar's cases. He (the President) also saw Prof. Lang's cases of lupus treated in the way mentioned by Dr. MacLeod, but he did not think the results obtained were so artistic as these. The scars in the Vienna cases were very irregular and thick, making the face look like a map of the United States. In many of the cases, however, the lupus was cured.

Dr. H. W. BARBER showed *three cases of Dermatitis scrofulosa*. During the past six months he had been collecting cases of this condition, which was probably the same as that described by Dr. Adamson some time ago. He observed that most of the patients with these scaly patches presented definite stigmata of tuberculosis, and thought it would be interesting to ascertain whether in such cases definite evidence of active, or potentially active, tubercular infection could be demonstrated. At his suggestion, therefore, Dr. Attwater had collected between fifty and sixty cases and had investigated them fully with Dr. Marshall, who was in charge of the Tuberculosis Department at Guy's Hospital. He considered that the condition of the scalp known by the French as *fausse teigne amiantacée* of Alibert was the same. It differed from ordinary pityriasis of the scalp, or dandruff, in that the scaliness occurred in circumscribed patches usually on the vertex, and that the scales were thicker and showed a tendency to "climb up" the hairs, to which they were closely adherent.

He had recently seen a girl, aged 19 years, who was sent up by a doctor for pityriasis of the scalp. She had one patch of *fausse teigne* on the vertex. Dr. Marshall found definite evidence of tuberculosis in her lungs on X-ray examination, and her symptoms were very suspicious of early active tubercular disease.

Dr. ATTWATER said that during a period of eight months at Guy's Hospital he collected a series of 50 cases of the condition described by Dr. Barber under the name of "*Dermatitis scrofulosa*"; 46 of these were children under 16 years of age. Of these 50 cases, 34 made their appearance at the Skin-Department before attending the Tuberculosis Department; the remaining 16 had attended the Tuberculosis Department before being seen at the Skin-Department. This was of interest, and of some importance as showing that in the majority of cases

the patient or the relatives regarded the skin-lesion as being of greater seriousness than any symptom of general ill-health that might have been present. These cases were all examined from the special point of view of the existence of some *clinical* evidence of tuberculosis, and he enumerated some of the more important results of his investigation :

(1) *Stigmata of tuberculosis*.—(a) Excessive growth of fine downy hair, especially on the back and on the arms and forearms, was present in 35 cases; (b) long, dark and silk-like eyelashes were present in 27 cases; (c) enlarged cervical glands were present in 18 cases (5 of which were associated with septic tonsils and carious teeth); (d) Lombardi's veins or spinal telangiectases were present in 12 cases; (e) there was clubbing of the fingers in 7 cases (associated with congenital heart disease in one case).

(2) *Family history*.—There was definite evidence of "household" infection in 6 cases, the father or the mother or a brother or a sister having at the time active tuberculosis and living in the same house. In 2 cases there was a history of the death from phthisis of a member of the same family.

(3) *Previous history of tuberculosis*.—Ten cases gave a history of having previously suffered from tuberculosis. These were as follows: Spinal caries, 1 case; tuberculous disease of the left femur, 1 case; tuberculous foot, 1 case; tuberculous rib, 1 case; tuberculous peritonitis, 1 case; tuberculous pleurisy, 4 cases; apical phthisis, 1 case. Four of these cases had already been in-patients of sanatoria.

(4) *Symptoms*.—The following symptoms were present: Cough in 37 cases; cough with expectoration in 11 cases; excessive sweating in 32 cases; wasting in 29 cases; pain in the chest in 12 cases; pain in the abdomen in 5 cases; loss of appetite in 15 cases; fatigue and dyspnoea in 14 cases.

(5) *Percussion of the chest* revealed root dulness in 29 cases; apical dulness in 14 cases; parasternal dulness in 4 cases, 2 of which also presented paravertebral dulness; definite narrowing of Krönig's areas of apical resonance was obtained in 6 cases, 3 of whom were girls of 18 years of age.

(6) *Auscultation of the chest* revealed definite crepitations in 12 cases, in 7 of which they were confined to the apices and upper lobes.

(7) *Eustace Smith's sign* (consisting of a bruit over the manubrium sterni with the head in the fully extended position) was positive in 12 cases.

(8) *Pleuritic rubs* were heard in 3 cases; all were confined to the upper lobes.

(9) *Examination with the X-rays* revealed: (a) Increased opacity of the roots of the lungs in 23 cases; (b) scattered opaque nodules in 18 cases, confined to the upper lobes in 6 cases; (c) increased fibrosis in 19 cases; (d) mottling of the lung substance in 11 cases, confined to the upper lobes in 8 cases; (e) increased bulk of the bronchial glands in 21 cases.

(10) *Sputum* examined in 6 cases, but no tubercle bacilli found.

(11) *Temperatures* were recorded at every attendance at the Out-Patient Department, and in many cases charts, showing the morning and evening temperatures, were obtained, and by these means 15 cases showed an evening temperature above 99° F. on repeated observation.

(12) *Body-weight*.—Careful and repeated weighing was carried out in all cases; 12 cases showed a satisfactory gain in weight; 13 cases remained more or less stationary; 15 cases showed a definite loss of weight.

(13) *Grouping of cases*.—He finally grouped his cases as follows: *Group I*:

Cases which showed evidence of active tuberculosis. *Group II*: Cases which presented evidence of old tuberculous infection, but in which there was no evidence of active disease at the present time. *Group III*: Cases which presented evidence of recent infection, but in which there was some uncertainty as to whether the disease was still active. *Group IV*: Cases which displayed evidence of enlargement of the bronchial glands. These might be looked upon with suspicion. *Group V*: Cases in which there was no evidence of tuberculous infection.

(14) *Diagnosis*.—*Group I* contained 18 cases. They were: Apical phthisis, 3 cases; acute tuberculous pleurisy, 3 cases; root phthisis, 1 case; tuberculous bronchial glands, 10 cases; tuberculous cervical glands, 1 case. All cases in this group were notified to the medical officer of health. *Group II* contained 12 cases. They were: Old root phthisis, 3 cases; old tuberculous glands, 6 cases; old tuberculous spine, 1 case; old tuberculous foot, 1 case; old tuberculous rib, 1 case. *Group III* contained 11 cases. They were: Apical phthisis, 3 cases; root phthisis, 1 case; tuberculous bronchial glands, 6 cases; tuberculous mesenteric glands, 1 case. *Group IV*: Enlarged bronchial glands, 6 cases. *Group V*: No evidence of tuberculosis, 3 cases.

(15) *Result of investigation*.—Forty-one cases (Groups I, II and III), or 82 per cent. of the series, showed definite evidence of tuberculous infection, the infection being still active in 18 cases (Group I), or in 36 per cent. of the series.

The PRESIDENT said that from a clinical examination he could not differentiate these cases from those of scurfy patches, which were present in a large proportion of poor children. He worked at the subject twenty years ago, and, for his own purposes, gave the cases the name "discoïd eczema," though it was not a true eczema. He read a paper on it at the Paris Congress in 1900, pointing out its varied bacteriology, and concluding it was due to wetting of the pillow. At that meeting Prof. Boeck, of Christiania, laid stress on the fact that these patients were all tubercular, his reason for the statement being that when they occurred on the body they produced a folliculitis, with a little erection of the follicle, which, he said, was a form of *Lichen scrofulosorum*. He (the President) did not agree with that point of view. On his return Dr. Whitfield took four cases and injected them with old tuberculin—a thing he would not think of doing now with fuller knowledge—but there was no reaction in any of the four. Either, therefore, these cases differed from the "*dartre volante*" of the French, or, tubercle being so common in London, the association was nothing more than a coincidence. He inclined to the latter view. These scurfy patches were very difficult to cure. On smothering them with ointment the patch seemed to disappear, but on washing off the ointment it was found not to have been cured. That was one reason why he did not think Sabouraud was right when he claimed the disease as a very mild form of impetigo, giving it the name "*Impetigo sicca*." If that were the condition, he did not see why it should be so resistant to cure. The question of the relationship to tuberculosis had been brought up before, but in the limited number of cases in which he used the reactive method the result was negative.

Dr. H. G. ADAMSON said that he formerly saw at a children's hospital a large number of children with scurfy patches, and he tried to classify them and work out their cause. He concluded that many of them occurred subsequently to impetigo, associated with streptococcal infection; others were due to the use of

strong soaps, such as "Sunlight" soap, or to other irritants, such as sulphur, when used for the treatment of scabies. But among these various cases he occasionally came across some in which the scurfy patches were symmetrically distributed and were very resistant to treatment. It took him five years to collect five cases, hence he regarded them as uncommon. They all had dry, scaly patches on the arms and legs and on the side of the face. He had shown such cases several times, and had called them chronic superficial dermatitis in symmetrical circumscribed patches. In a paper on the subject he discussed the question of diagnosis between chronic eczema, seborrhœic eczema, Lichen scrofulosorum, Boeck's Eczema scrofulosorum, parapsoriasis of Brocq, and the parakeratosis of Brocq, and he concluded that these were independent cases. In two of his cases the Calmette test was done, with negative result. In none of the cases he had seen had there been any evidence of tuberculosis. His final conclusion was that they were streptococcal conditions. In two or three of the cases the skin trouble began after a discharge from the ear. Dr. Barber had not given a definite clinical account of his cases. If one took fifty children with scaly patches these fifty cases might include chronic eczema, seborrhœic eczema, Lichen scrofulosorum, parapsoriasis of Brocq, the symmetrical circumscribed patches he had just described and various other affections, and it would not be surprising if evidence of tuberculosis were found in a certain proportion of these cases. What they wanted to know was whether any definite clinical type of chronic scaly patch was related to tuberculosis other than the type known as Lichen scrofulosorum.

Dr. G. MARSHALL considered the President's point, that both the conditions, this disease and tuberculosis, were common in poor children, was a most important one. He saw Dr. Barber's case from the point of view of the chest infection, and for a long time he was entirely sceptical, because very few of the children were obviously ill. Tuberculosis was so common in the neighbourhood in which Guy's Hospital was situated, that it was necessary to be able to say more than that the patient had diminished resonance at the lung roots, and opacities in the lung as shown by X-rays. They did not diagnose tubercle unless the general condition showed signs of toxæmia, in that the patients lost weight and had pyrexia. They had not tested these children with tuberculin, either by von Pirquet's method or by injection; the trust physicians had placed in tuberculin tests was pathetic. He had done many tests with controls, and with Koch's old tuberculin many gave no reaction at all, though the patient was known to have active tuberculosis and was coughing up the bacilli. There was no standardisation of tuberculin—even that obtained from laboratories of repute was often negative. He advocated ignoring negative evidence obtained by doing a tuberculin test. The only additional evidence of tubercle which was taken was when a child, sitting in a chair, well clothed, had a definite pleuritic rib.

Dr. F. PARKES WEBER said he did not consider the presence of so-called spinal telangiectases in twelve out of fifty children as a point in favour of the suggested tuberculous origin of the cutaneous condition in question. These "spinal telangiectases" were very common in quite normal young adults.

Dr. MACCORMAC said that there was certainly a type clinically similar due to a streptococcal infection, for he remembered when, some years ago, he was a medical officer to the London County Council, an epidemic of this infective condition occurred in one of the schools. He thought more than half of the

children in certain class-rooms became infected, and that the causal organism was determined to be a streptococcus by bacteriological investigation. In this particular outbreak the eruption was found on the face, was contagious, and was limited to certain class-rooms. It proved rebellious to treatment.

Dr. SEMON thought that the morphological description of the lesions in these cases had hardly been succinct enough to differentiate them from the common types of scurvy patch to which Dr. Whitfield had referred. The delicate follicular plaques on the arms of one of the cases might conceivably be due to a tuberculous focus, but he was inclined to group the facial lesion in the other cases as being due to an external irritant, such as a wet pillow, or soap of an irritating, super-alkaline type. He recalled a case in a girl aged 9 years, in which local applications of various kinds had failed to relieve permanently, until the tooth-paste she had been using was changed for a milder variety.

Dr. ARTHUR BOYS said Dr. Marshall's contempt for tuberculin tests without control suggested to him (the speaker) that the present contribution would be of greater value if the statistics of the evidence of tuberculosis in these children (fifty) were accompanied by figures with regard to fifty children of the same age and social standing who showed no eruption.

The PRESIDENT wished to join issue in regard to the statement which had been made in reference to tuberculin, if used by injection. He did not now use tuberculin by injection, because it had been learned that it was dangerous in that way; but it was known to older members of the dermatological specialty that in the cutaneous lesions of tubercle injection by tuberculin was an extraordinarily reliable method. In the early discussions as to whether Bazin's disease was or was not tuberculous, numbers of cases were tested with tuberculin—he had tested several himself—and in no instance had he failed to get a high temperature. Now he would regard the doses formerly given as criminal. Patients got a temperature of 105° F., and the lesions liquefied or disappeared. His cases were done before 1900. Therefore he agreed that the use of old tuberculin by injection must be given up, not because it was unreliable, but because of its great danger to the infected patient.

Dr. MARSHALL agreed with Dr. Weber that but small importance could be attached to the presence of spinal telangiectases in these cases. It was one of the ordinary stigmata which were quoted, but it had no real place in the diagnosis of these cases.

Dr. BARBER, in reply, said he thought he could differentiate this condition from *dartre volante* of the French, which he agreed was usually due to maceration of the skin with saliva or discharge from the nose, followed by secondary infection. It could be differentiated from the soap dermatitis, with which they were very familiar at Guy's Hospital. He hoped to publish a paper giving colour representations of these patches. He thought Dr. MacCormac's cases were examples of *dartre volante*. He had recently been looking after three children, all of whom had superficial scaly patches on the face, and the nurse and mother developed the condition too. There was no evidence that the eruption now shown was infective, and he believed the clinical appearance was different from that of the other conditions mentioned.

Dr. H. C. SEMON showed a case of *bilateral parotitis of (?) syphilitic origin*. The patient, a woman, aged 54 years, had a strongly positive

Wassermann reaction, and confessed to genital sores, and a skin eruption coinciding with a miscarriage which immediately preceded the birth of her daughter, who was also shown. She had five younger children, all healthy. The dryness of the mouth, for which all manner of treatment had been tried, followed gradually on an attack of "influenza" four years previously, and was so complete as to make swallowing of any solid substance impossible without a drink of water. There was complete absence of the salivary ferment as tested against a control, with a 0.1 per cent. starch solution, but the functions of taste and smell were unimpaired, and the patient appeared to have an otherwise normal digestion. Associated with the dryness there had been frequently recurring attacks of parotitis, usually of the right gland. A well-known surgeon excluded calculi about two years previously. The daughter's case was an example of Hutchinson's classical syndrome: (1) There was complete bilateral nerve-deafness; (2) iritis, for which double iridectomy had been performed; and (3) the characteristic circular bevelling of the central upper incisor teeth.

The case was absolutely unique in his experience, but two somewhat similar cases, one in a woman, aged 58 years, and another in a girl, had recently been described by Portmann in the *Journal des Medecins de Bordeaux* (August, 1920). This author appeared to have had the same difficulty in arriving at the aetiological factor.

He did not desire to lay too much emphasis on the strong specific history in this case, but he was assured by the patient that since the commencement of anti-syphilitic medication six weeks previously the mouth had begun to show signs of moisture, and there was no doubt that the lateral borders of the tongue were distinctly less dry than hitherto.

Dr. J. M. H. MACLEOD showed a case of *pigmentation* (? *Addison's disease*). The patient was a boy, aged 6 years. His skin showed a symmetrical melanotic pigmentation around the mouth, on the neck, axillæ, nipples, umbilicus, penis and scrotum, inner surfaces of the thighs, gluteal fold and popliteal spaces. The remainder of the skin had a dirty appearance and was slightly pigmented everywhere. The colour in the above-mentioned regions varied from a light brown about the neck to almost black in the nipples and

genitalia. On the scrotum and penis the skin was not only pigmented but was rough and thickened. The mucous membrane of the mouth was not affected. At birth the skin was normal and the pigmentation did not appear till he was several months old.

The child was delicate, thin and nervous. When he was about a year old he was under treatment for tuberculous peritonitis at the Victoria Hospital for Children. He made a fairly satisfactory recovery, but had since been delicate, rather weakly, and had suffered from occasional attacks of bronchitis. Lately he had been losing weight. His heart's action was not definitely feeble, there was no irritability of the stomach or diarrhœa, and the spleen was not palpable. The pigmentation probably resulted from tuberculous involvement of the suprarenals and fibro-caseous changes.

Dr. J. M. H. MACLEOD showed a case of *early sclerodermia*. The patient was a girl, aged 14 years, with discoloured patches on the skin—especially on the trunk. These patches were slightly pigmented with a faint brownish tinge, and presented a violaceous border which faded into the surrounding skin. The skin of the affected areas was very little altered in texture except in two of the patches, in which it had begun to become sclerosed, white and shiny. There was a large patch occupying half of the right side of the abdomen, extending from the back downwards and forwards to near the groin, and a number of smaller patches chiefly over the back and buttocks and especially confined to the right side. A number of the patches on the back were oval in shape, with the long axis stretching downwards and forwards roughly in the direction of the ribs. The lesions first appeared about two years ago, immediately following an attack of acute tuberculous pneumonia. From this attack the child partially recovered, but had been delicate ever since, and was now suffering from tuberculous lung disease involving the upper part of the right lung.

The special interest of the case consisted :

(1) In the early stage of most of the patches (sclerosis not having set in), so early as to render the diagnosis difficult.

(2) In the association of the cutaneous lesions with tuberculosis—an association which we had not seen referred to in the literature, and which in this case seemed to be more than a coincidence. It

had been known to occur in connection with other general disturbances, such as rheumatism, myxœdema, pregnancy, alcoholism, etc.

It was an interesting point that the affection was much more extensive on the right side than on the left, and that it was on the right side that the lungs were chiefly, if not solely, affected. Cases of this type pointed rather to an infective process of toxic origin being the cause of the lesions and to the vascular changes being primary.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

INDUSTRIAL POISONING BY FUMES OF HYDROCYANIC ACID.

F. KOELSCH. (*Zentralbl. f. Gewerbehyg.*, May and June, 1920.)

THIS article deals with the accidents arising from the breathing of this gas in industry. Amongst them he mentions that men who work in the galvanising rooms, plating articles of silver and gold, suffer from an affection of the skin of the face which he considers typical of "Acne rosacea." When leaning over the plating baths they are constantly inhaling very minute quantities of hydrocyanic acid fumes. Koelsch suggests that this vapour acts like alcohol, producing in time an angioneurotic inflammation of the skin.

In the July and August numbers of the same journal Bachfeld has a paper upon "Observations on the Toxicity of Coal-tar Dyes in Industry." He discusses only their irritating effects upon the skin and eyes. Out of 4945 employees, in six years he came across 159 cases of skin-complaints, of which 32 resulted in disability and loss of time. Of these accidents 3 to 4 per cent. occurred in colour makers, 2 to 3 per cent. in workers amongst the crude chemicals or the intermediate products, and less than 1 per cent. in the handlers of the finished dyes; in other departments, handling neither crudes, intermediates, nor colours, 0.28 per cent. In this article Weyl has classified 96 coal-tar colours as poisonous, but he finds that only two are injurious to the skin, viz. "sulphur-black" and "Echtmarineblau." A. Hamilton, *Journ. Ind. Hyg.*, 1920, ii, p. 157, abs.: These reviews support the fact that of the thousands of synthetic dyes produced, very few, if properly finished, irritate the skin.

R. P. W.

CONTRIBUTION TO THE STUDY OF BROMIDE RASHES. G.

LUCCHETTI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. v, p. 603.)

Two cases of vegetative ulcerating bromide rashes are recorded, with a description of the microscopic appearances of the skin. A very complete history of the literature is given and all the theories of different authors mentioned. The article is long, but does not add materially to our knowledge of the subject. There are photographs of the cases and of sections of the skin and a complete bibliography.

R. C. L.

LICHEN SCROFULOSORUM. VITTORIO BARBAGLIA. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1919, fasc. vi, p. 473.)

THE author reports a typical case of Lichen scrofulosorum in a boy, aged 17 years. Lesions were excised, and microscopically showed typical tubercle nodules, with giant-cells, etc., and some caseation in the centre. No tubercle bacilli were found in the sections, but two guinea-pigs which were inoculated with material from the skin-lesions both died in six or seven weeks of general tuberculousis.

R. C. L.

NOTE ON SOME CASES OF BOTRIOMYCOSIS. G. MARIANI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 421.)

Two cases are recorded, one on the lower lip and the other on the scalp. The author divides the growths into three layers from below outwards: (1) A basal layer consisting of dilated lymphatics and blood-vessels arranged in lines, (2) a mass of dilated vessels surrounded by fibrous tissue and arranged irregularly like a network, and (3) a zone of inflammatory cells.

R. C. L.

CONCERNING A CASE OF GRANULOMA TELANGIECTODES (PSEUDO-BOTRIOMYCOSIS HUMANA.) G. SEGRÈ. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 413.)

THE case recorded was in a man, aged 56 years, who injured his left thumb with a splinter of wood. This was followed by a septic cellulitis of left arm, which healed with the normal treatment. Two months later on the front of left forearm, below the bend of the elbow, a typical red pedunculated lesion appeared. After removal three fresh lesions appeared a little higher up, apparently on the line of the lymphatic vessels. On removal these showed the typical appearances of a granuloma, consisting chiefly of fibroblasts with numerous dilated blood-vessels. A considerable number of plasma-cells were also present. Cultures were made with antiseptic precautions from one of the lesions where the skin was unbroken, but with negative result. The author discusses the aetiology of the condition, and concludes that the staphylococcus found by previous observers cannot be considered as the causative agent. He also discusses the question of whether the growths should be considered as inflammatory granulomata or as neoplasms. He favours the former view, and thinks that the infection probably travels along the lymphatic channels.

R. C. L.

ACUTE EXUDATIVE OEDEMA OR ECZEMA URTICANS. L. MARTINOTTI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iv, p. 525.)

THE author reports a case which began with a pustular folliculitis on the right leg together with an acute oedema of the face and of the scrotum. There was also a slight rhinitis and a catarrhal conjunctivitis. The oedematous areas on the face later developed pustules, and in a little more than ten days the whole eruption disappeared. In a few days, for no apparent reason, the oedema suddenly returned on the left side of face and left ear, accompanied by a suppurative otitis media with a temperature of 38.5° C. The tympanic membrane was punctured and the pus let out, and the skin rapidly returned to a normal condition. The author attacks Neisser's name of Eczema urticans for similar cases, and maintains that the condition is much better described as acute

exudative oedema of toxic origin, and that it has no connection with eczema. He does not mention the possibility of the condition being a *Dermatitis venenata*.

R. C. L.

A CASE OF PURPURA ANNULARIS TELANGIECTODES LIMITED TO THE SUB-UMBILICAL ZONE OF THE ANTERIOR ABDOMINAL WALL. G. VERROTTI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 444.)

THIS case was in a woman, aged 40 years, who presented typical ringed lesions of *Purpura annularis telangiectodes* limited to the lower abdomen between the umbilicus and pubic region. The eruption was bilateral and gradually faded away at each side. The patient also suffered from multiple interstitial fibromyomata in the uterine wall. The uterus and adnexa were removed and seven or eight days later the skin-eruption disappeared. The author considers that the skin-eruption, and especially its peculiar limited distribution, were due to the tumour in the uterus, and that the removal of the pelvic organs caused a disappearance of the eruption, either because of the removal of the ovaries or because the eruption had been due to a reflex irritation from the uterus.

R. C. L.

VEGETABLE AND ANIMAL PARASITES.

DEPILATION WITH RADIUM AS A TREATMENT FOR TINEA CAPITIS (PRELIMINARY NOTE). L. MAZZONI and V. PALUMBO. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 454.)

THE authors have been using radium to cause epilation in cases of ringworm and favus. They first tested their preparations of radium on photographic plates to find the area of irradiation for each preparation at a given distance from the plate. The head to be treated is covered with a cap of starched cloth, which is modelled to each head and extends about 2 cm. beyond the edges of the hairy scalp. On this cap the preparations of radium are fixed with bandages at suitable distances from each other, so that the area immediately below the radium gets a full dose, and the areas between get a cross-radiation from each side in the same way as X-rays are applied to the whole scalp. The radium is suitably filtered so as to allow the hard β - and the γ -rays to pass through. Each child receives from 5760 to 7200 mgrm.-hours, the amount varying with the size of the head. The hair comes out, as after X-rays, about fifteen days later. The authors have treated twenty-eight cases of *Tinea capitis* and five of favus with excellent results. They claim that this method is safer than X-rays, because once the time of exposure to a given preparation of radium is known the dose can be repeated in each case with absolute accuracy. The radium caused no local or general symptoms. Further experiments are being carried out to see whether the radium has any parasiticide effect on the fungus in ringworm and favus.

R. C. L.

TINEA MICROSPORON IN THE PROVINCE OF MILAN AND COMO. A. PASINI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 376.)

AFTER referring to the relative rarity of small-spored ringworm in Italy, he gives the number of cases of ringworm in the provinces of Milan and Como from

1912 to 1919 inclusive. Out of 1534 cases 1017 were large-spored ringworms, 398 favus and 119 small-spored ringworms. R. C. L.

SMALL-SPORED RINGWORM OF THE SCALP IN AN ADULT.

A. PASINI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 381.)

THE case described was in a woman, aged 29 years. She was infected on the scalp from her own child, aged 7 years. The fungus was found in the hairs in both cases, and both gave a culture of *Microsporon iris*. R. C. L.

SOCIAL PROPHYLAXIS OF TINEA. G. CIARROCCHI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 385.)

THE author approves of the formation of ringworm schools, where the children are taught and receive appropriate treatment with X-rays. For favus he considers that mechanical depilation at certain centres could be carried out if X-rays are not available. He points out that for centuries there has been a focus of infection of favus in the south-east part of the province of Rome, whilst in the city of Rome and the north-east part of the province the disease does not exist. He concludes that the disease is not spread in the one district of the province by infection from animals but from one human being to another. Persons infected with favus there sometimes have the disease all their lives and pass it on to one or more of their family. The author maintains that the disease could be stamped out by isolation and treatment of all the existing cases.

R. C. L.

CLINICAL CONTRIBUTION TO THE HISTOLOGY AND MYCOLOGY OF GRANULOMA TRICHOPHYTICUM. D. MAJOCCHI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 397.)

TWO cases of kerion of the scalp were examined. Microscopically pieces of the scalp showed granulomatous foci. In the central part was the hair with fungus in it; round that were grouped giant cells, and outside that again epithelioid cells, mono- and polynucleated leucocytes, and then a zone of plasma-cells. In the lesions which had existed longest the granuloma had taken on a fibroid keloid-like structure. In the two cases recorded one gave a culture of *Trichophyton cerebriforme* and the other of *T. plicatile*. In previous cases the author has also found *Trichophyton violaceum* and *T. rosaceum*. He holds the view that each morphological variety of fungus does not produce a corresponding clinical lesion.

R. C. L.

CONTRIBUTION TO THE STUDY OF EPIDERMOPHYTON INGUINALE. G. W. WENDE and K. R. COLLINS. (*Arch. of Derm. and Syph.*, 1921, iii, p. 1.)

IN this contribution, which is based on a number of cases of dermatitis, of which thirteen were found to be due to the *Epidermophyton inguinale*, the writers found a great multiplicity of type in the laboratory growths, and they describe the microscopical appearances both in cultures and in scales. They were struck with the fact that the epidermophyton lesions varied so much in appearance that the character of pleomorphism was as applicable to the lesions as to the cultures.

J. M. H. M.

OBSERVATIONS ON A CASE OF SPOROTRICHOSIS CUTANEA.A. MIBELLI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 422.)

THIS is only the tenth case of sporotrichosis recorded in Italy. The lesions were purely cutaneous, no deeper structures being affected. It was in every respect typical. The *Sporothricium Beauverii* was grown from the lesions, and the patient's serum gave a positive complement-deviation test.

R. C. L.

STUDIES ON ALBUMINURIA AND EOSINOPHILIA IN SCABIES.J. M. HAYMAN and T. S. FAY. (*Arch. of Derm. and Syph.*, 1921, iii, p. 32.)

THESE studies were based on the examination of 49 patients with scabies. In 17.1 of these cases there was a slight transient albuminuria; this occurred in generalised cases, and was increased to 28.5 per cent. by sulphur treatment, but there was no evidence that a natural nephritis or kidney irritation of any clinical significance was produced by the disease. With regard to eosinophilia, it was found that the scabies was accompanied by a slight but definite eosinophilia proportional to the extent of the infestation, but that there was no increase of blood eosinophilia in the neighbourhood of the cutaneous lesions.

J. M. H. M.

TWO NEW CASES OF DERMATOMYIASIS MUSCOSA DUE TO LUCILIA SERICATA.D. MAJOCCHI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 395.)

BOTH were cases of chronic leg ulcer on which a fly (*Lucilia sericata*) deposited its ova. The development of the larvæ of a bright green colour on the ulcer caused intense itching, with the formation of areas of necrosis and formation of new granulation-tissue.

R. C. L.

DERMATOBIA HOMINIS.T. B. MAGATH. (*Arch. of Derm. and Syph.*, 1920, ii, p. 716.)

A CASE is here reported in a man, aged 28 years, who, after being a week in Panama, noticed a local sensation in his shoulder like a sharp pin-prick, which was followed five or six days later by the appearance of a painful boil which developed into a carbuncle. He applied a poultice of kaolin. The boil came to a head, and a physician lanced it and removed a "worm" and a quantity of yellow pus and dark blood. Later the patient himself extracted a "worm" from another site. He returned to the United States of America, and a short time afterwards had other abscesses, which were opened, larvæ removed, and the cavities packed with phenolated gauze. This treatment entirely cured the condition.

The so-called "worm" turned out to be the larva of the *Dermatobia hominis*, a larva which is about 9 mm. long and 3 mm. wide in its greatest diameter. It occurs in Brazil, French and British Guiana, Venezuela, Honduras, Guatemala, etc. It has been met with close to the south-western border of the United States of America, but no cases have been reported in which it was contracted in that country. The larva has been found not only in man but in domestic animals, monkeys, jaguars, etc.

The life-history and mode of transmission of the parasite have not yet been fully worked out. Certain observers consider that the mosquito is possibly the

carrier of infection, as larvæ of this fly have been found cemented to mosquitoes of the genus *Janthinosoma*, and it has been thought possible that the young larva escapes from the mosquito as it bites and takes up its habitat in the skin of the victim.

J. M. H. M.

NEW GROWTHS.

A VOLUMINOUS HÆMO-LYMPHANGIOMA OF THE LEFT THIGH. M. MANTEGAZZA. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 346.)

THE lesion was situated on the left thigh on the inner aspect, was present at birth, and grew in size as the patient grew. It showed the usual projections, some filled with clear yellow fluid and others with blood. On several occasions owing to injuries the lesion swelled up and became painful. It measured 25 cm. in length by 20 cm. in breadth. It was removed surgically and the diagnosis confirmed microscopically. All the cavities were lined by endothelium, and the deeper ones showed papilliform projections of the vessel-walls into the lumen. There was considerable inflammatory change in places and many of the vessels were thrombosed and here and there obliterated. In the deeper part there was a large mass of connective tissue in which were numerous dilated blood- and lymphatic vessels.

R. C. L.

A CONTRIBUTION TO THE STUDY OF ACANTHOSIS NIGRICANS AND DERMOGRAPHISMUS MELANODERMICUS. D. MAJOCCHI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 483.)

THE case was a typical one of Acanthosis nigricans with the usual pigmented papillomatous lesions in the flexures in a woman, aged 39 years. She also presented brown macular lesions on the skin and small wart-like growths. The skin of the back was blistered with a mustard leaf, given a pastille dose of X-rays, frozen with CO₂ snow, and exposed to 5,000,000 units of radium for thirty minutes. Different areas of the skin were treated with each of these applications, and in all cases the areas so exposed developed a dark-brown pigmentation, which remained permanently. Erythema was produced by the mustard, CO₂ snow and radium, and after the erythema disappeared the pigmentation appeared. No erythema followed the X-ray exposures, but the pigmentation appeared in a few days. Pieces of skin both from the acanthotic lesions and the artificially produced pigmented areas were examined microscopically, and sections are shown. The patient was very thoroughly examined by X-rays and other methods, but no sign of abdominal growth found. The question of malignant tumour in the abdomen, benign tumour affecting suprarenals, and tumours of or interference with the function of the solar plexus is thoroughly discussed. The author comes to the conclusion that these cases of Acanthosis nigricans and Dermographismus melanodermicus are due to some special individual predisposition, but whether it is congenital or acquired, and, if acquired, what organ is at fault, he is not prepared to state.

R. C. L.

SOME PARTICULARS ABOUT A CASE OF PAGET'S DISEASE.

P. FILADORO. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 481.)

THE case was a woman, aged 48 years, who had suffered from a hard swelling over the sternum for about a year and an induration of the right nipple. There

were also hard nodules in the skin of the right breast. The Wassermann reaction was markedly positive, and the patient was given three injections of neoarsenohenzol followed by injections of calomel. All the lesions disappeared, but the patient returned in two months with a recurrence on the right nipple, which was retracted and surrounded by a zone of induration. Further anti-syphilitic treatment had no result, so the breast was removed and found to be affected with Paget's disease of the nipple, with a carcinoma of the mamma. The author thinks the syphilis had had some influence on the development of the Paget's disease. The case is also peculiar in the rapidity with which the carcinomatous condition developed.

R. C. L.

THE SO-CALLED ADENOMA SEBACEUM OF BALZER (NÆVUS EPITHELIOMATOSUS CYSTICUS OF THE FACE). A. PASINI.
(*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 349.)

A RECORD of five examples of the above disease is given with photographs of three of them and micro-photographs of skin-sections. The author gives a thorough *résumé* of all recorded cases, and concludes that the name Adenoma sebaceum is not admissible for the condition because the growth consists of neoplastic tissue arranged in lobules and tubules. There is no true glandular arrangement. He approves of the term "Nævus epitheliomatosus" as describing the great mass of tissue, and would add "cysticus" to it because of the cystic spaces in the mass of cells. He is also of opinion that its constant localisation "on the face" should be indicated in the name. A comprehensive bibliography completes the article.

R. C. L.

EPITHELIOMAS DEVELOPING ON LUPUS ERYTHEMATOSUS.
W. G. WANDER. (*Arch. of Derm. and Syph.*, 1921, iii, p. 22.)

IN this paper a detailed report is given of four cases:

Case 1 was a woman, aged 82 years, who had suffered from Lupus erythematosus for twelve years, and in whom an epithelioma had developed on the scar-tissue near the angle of the mouth.

Case 2 was a man, aged 60 years, who had suffered from Lupus erythematosus for twenty-five years. It had given him little trouble until he applied blue vitriol (copper sulphate) to it, which resulted in epitheliomatous changes.

Case 3 was a man, aged 60 years, who had suffered from Lupus erythematosus of the face for more than twenty-four years, and on this had developed basal cell carcinomata of the face.

Case 4 was a man, aged 41 years, who for twenty-four years had suffered from Lupus erythematosus involving the butterfly area of the face. He sustained an injury to the affected area of the nose from a branch of a tree, and as a result of this a verrucose raised lesion developed.

J. M. H. M.

SYPHILIS, ETC.

EXTRA-GENITAL SYPHILIS. M. TRUFFI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. ii, p. 162.)

FIFTEEN cases are reported in the following situations: Conjunctiva, eyelid, back of hand, breast (four cases), side of face (six cases) and nose. In all cases the causal organism was found and in most of them the source of infection was traced.

R. C. L.

NEUROSES OF THE SOLAR PLEXUS AND SYPHILIS. MARIO COPELLI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1919, fasc. vi, p. 484.)

THE author reports three cases, all in women who had attacks of syphilis which were not thoroughly treated in the early stages. All suffered from severe occipital headaches and attacks of griping pain, and pulsation in the epigastrium, sometimes accompanied by vomiting or diarrhoea. The attacks always came on every evening and lasted till early morning. All these cases were quickly cured by the administration of mercury and iodides. The author concludes that the attacks were due to syphilis of the solar plexus in individuals who had a neuro-pathic heredity and whose syphilis had been insufficiently treated in its early stages.

R. C. L.

STUDY OF A CASE OF YAWS (FRAMBESIA TROPICA) CONTRACTED BY AN AMERICAN SOLDIER IN FRANCE. J. F. SCHAMBERG and J. V. KLAUDER. (*Arch. of Derm. and Syph.*, 1921, iii, p. 49.)

THE case here recorded was that of an American soldier who contracted yaws in France, probably through contact with an infected man stationed there during the war. Though a considerable number of cases of this disease have been reported from countries where it is endemic, this is one of the rare instances in which it has developed in a non-tropical country. Another such case was reported by C. S. Stevenson in an American sailor who was infected in Brest, France.

The patient was a native of Philadelphia, and prior to his army service was a plumber. He enlisted in Canada, and was sent to France in 1917. During most of his service he was in the northern part of France, and did not come in contact to any extent with dark-skinned soldiers. He returned to Canada in October, 1918, and from there came directly home to Philadelphia. About a week after his return the yaws lesions appeared about the palms of the hands, forearms, soles of the feet, and scalp, and were associated with enlargement of the lymphatic glands. The lesions had a verrucose and papillomatous surface, and bore a general resemblance to those of blastomycosis. Serum from the skin lesions showed spirochaetes and the Wassermann reactive was positive. Neoarsphenamin, 0.9 of a gram, was given intravenously, and after two injections the lesions disappeared completely. The spirochaete was recognised as the *S. pertenuis* of Castellani.

J. M. H. M.

ULCERATION OF THE SKIN OF THE PENIS DUE TO THE GONOCOCCUS. G. MARIANI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 295.)

THE patient suffered from a subacute gonococcal urethritis of all the urethra and from a prostatitis. The under surface of the prepuce showed three punched-out looking ulcers with sero-purulent discharge. The discharge contained only gonococci, no Ducrey's bacillus nor spirochaetes. It was found that what resembled superficial ulcers were really fistulae communicating with the urethra, and the author concludes that they originated from a para-urethral pocket from which the infection spread by the lymphatics to the subcutaneous tissue and thus to the skin. Removal of the affected prepuce cured the condition.

R. C. L.

REVIEW.

SYPHILIS AND ITS TREATMENT.*

ON reading this book one is struck by two things: first, that the author has had a rich experience, and secondly, that he has evidently taken the fullest advantage of his opportunities.

After a short but adequate epitome of the historical side of the disease, a few pages are devoted to general remarks on its course and general description. These impress me as very sound and cautious, but I was surprised to find no statement of the "depôt" theory, though this is, perhaps, not very clearly implied.

I notice that in his description of the parasite, for which he prefers the name "treponema" to "spirochæta," he definitely states that it is "a minute protozoon," though later he says expressly that there is still some difference of opinion on the subject.

In dealing with the primary sore he makes the, to me, somewhat surprising statement—"Scabies is extremely common on the genital organs, and it is probable that among the lower classes syphilis is more often inoculated through the abrasions in the skin caused by this disease than by any other means." I can only say that I do not think that this is the experience of most of us.

Generally speaking the chapter on the primary lesion is very good; it is full of detail, and indicates well the difficulties met with in diagnosis, and as far as possible in the present state of knowledge gives the methods of overcoming these.

The secondary period is dealt with at some length and in a well-arranged manner. One statement seems to be debatable, and that is that the coppery colour is due to the plasma-cell infiltration in the corium, and that on pressure a yellowish stain is left. This coppery colour is not, as a matter of fact, very obvious in the fresh papules, and these leave no stain. Very soon, however, pigmentation begins, and it is to this that the yellow coloration is due.

It is interesting to note that in the coloured plate of a relapsing circinate erythematous rash the patient is suffering from jaundice. In more than one book where this rash is illustrated in colour I have observed the same fact, and it makes one wonder whether there is some special association of syphilis of the liver with this rather rare type of rash.

Apparently the author uses the term "condyloma" in a rather unusual way, since under the heading "Papulo-erosive or Condylomata" he groups simple mucous plaques.

This is, I think, a pity, as condyloma has been so long associated in our minds with epithelial overgrowths.

In the chapter on the Wassermann reaction the author agrees with what I think is the general modern view, namely, that, performed with good technique

* *Syphilis and its Treatment.* By WILFRID S. FOX, M.A., M.D., B.C.Cantab., M.R.C.P.Lond., Physician for Diseases of the Skin; Lecturer on Dermatology and Physician in Charge of the Venereal Department, St. George's Hospital; late Assistant Physician to the Skin-Department of the Seamen's Hospital, Greenwich. Roy. 8vo: Pp. viii + 195. Illustrations, 22 in colour and 31 in black and white. London: H. K. Lewis & Co., Ltd., 1920. 36s. net.

and interpreted with knowledge and intelligence, it is of extreme value in diagnosis. It is therefore somewhat curious to hark back from this chapter to p. 37, where he states, in connection with the early roseola, that "frequently the Wassermann reaction has not become positive so early in the secondary stage as this," the stage referred to being that of an enormous macular syphilide, with evidently some infiltration.

Under the heading of "Treatment by Arsenical Compounds" he gives under numbered paragraphs the organs injured by the arseno-benzol group, but among these paragraphs there is none on the kidney!

In the use of mercury he evidently favours the injection method, but the whole chapter is well thought out, and he is not slavishly attached to the insoluble preparations.

The illustrations are very unequal, and on the whole not very successful. There are, however, exceptions to this, and some are quite valuable in depicting rare conditions.

Summing up the book as a whole, it is only fair to say that anyone requiring information on any special point will be almost sure to find it in this volume.

The arrangement is good, and great care has been taken in putting the reasons for the author's opinions before the reader. Though one may differ from him occasionally it is only on debatable points, and one closes with the reflection that this is the honest work of a man of wide experience and impartial mind, who has a right to his opinions.

A. W.

OBITUARY.

WE much regret to record the death of Dr. Phineas Abraham, one of the Vice-Presidents of this Journal. An appreciation of his services to Dermatology will appear in our next issue.

BOOKS RECEIVED.

Skin-Diseases and their Treatment. By ARTHUR WHITFIELD, M.D., F.R.C.P. 2nd Edition, 1921. Pp. 291. With Illustrations. London: EDWARD ARNOLD. Price 18s. net.

Manson's Tropical Diseases. Edited by P. H. MANSON-BAHR, D.S.O., M.A., M.D., M.R.C.P. 7th Edition, 1921. 21 coloured plates, 6 plates, 404 figures in text, and 31 charts. London: CASSELL & Co., LTD. Price 30s. net.

Dermatologische Vorträge für Praktiker. Heft 17: *Schönheitsfehler und ihre Behandlung.* By Dr. S. JESSNER. 4th Edition, 1921. Leipzig: CURT KABITZSCH. Price M. 13.

Dermatology: The Essentials of Cutaneous Medicine. By W. J. HIGHMAN, M.D. 1921. Pp. 482. 95 plates. New York: THE MACMILLAN CO. Price 32s. net.

Diathermy: Its Production and Uses in Medicine and Surgery. By E. P. CUMBERBATCH, M.A., B.M., M.R.C.P. 1921. Pp. 193. London: WILLIAM HEINEMANN (MEDICAL BOOKS), LTD. Price 21s. net.

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MULTIPLE CARCINOMA OF THE SKIN: "PRE-CANCEROUS DERMATOSIS OF BOWEN."

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WITH PATHOLOGICAL REPORT BY

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THE case here described was shown at the meeting of the Dermatological Section of the Royal Society of Medicine in October, 1920, attention being particularly directed to the "pre-cancerous hyperkeratosis" of certain portions of the affected skin and to the multiplicity of the malignant lesions. In the discussion Dr. Adamson expressed the opinion that the patient was the first instance in which the "pre-cancerous" hyperkeratosis described by Bowen in 1912 had been demonstrated in the Section. For this reason I have ventured to illustrate and describe in some detail both its clinical and histological characters, and have made abstracts of the cases reported by Bowen and Darier.

CASE 1 (Bowen*).—The patient, who was first seen by Bowen in 1909, was a male of English parentage, born in Massachusetts. He was a man of small stature, aged 49 years, a weaver by occupation, and apparently in fair health. There was nothing of importance in the family history. There was no history or evidence of venereal disease. The patient was not addicted to the use of

* *Journ. Cut. Dis.*, 1912, p. 241.

alcohol. Nothing abnormal was detected on examination of the internal organs. The cutaneous affection began when he was thirty years of age, with the formation of "pimples" in the gluteal region. There was slight irritation, but no notice was taken of the condition for several years, when the patient noticed that the affected area was increasing in size. Pain was experienced when sitting or after walking, and especially when the lesion became excoriated and discharged. The inconvenience and pain were chiefly noticeable in the warm weather.

Clinical appearances.—In the right lumbar region there were scars which were said to have followed an abscess which the patient had in boyhood. Numerous small angiomas from a pin's head to a small pea in size were scattered over the abdomen and back.

The affection for which he sought advice was on the left buttock. The area involved was roughly circular, and 4 in. in diameter. The individual lesions were both isolated and confluent. The isolated lesions were papules and tubercles varying in size from $\frac{1}{8}$ in. to $\frac{1}{2}$ in. in diameter, generally situated at the outer margin of the patch and often with a circinate or serpiginous arrangement. The centre of the area was made up of more or less confluent lesions. The isolated and confluent lesions were of a dull red colour, moderately firm, but not hard to the touch. The surface was somewhat uneven, and in parts had a tendency to papillomatous formation. In places there were scaling and superficial crust-formation, and evidence of slight exudation.

A temporary improvement followed the administration of potassium iodide, but the greatest benefit was derived from curettage, and later from deep freezing with carbon dioxide snow.

Although under observation for two years no lesion disappeared spontaneously, but the patient was able to continue his employment, though he suffered considerable pain and inconvenience, especially during the hot weather.

Histological appearances.—Zenker's fluid; serial sections made:

(1) *Epidermis.*—Extreme hyperplasia of the epidermis, particularly of the rete. A small amount of the outer layer of horny plates was intact, with here and there a leucocyte or nucleus that retained the stain. The plates of scales were loose and broken, and beneath this outer layer was an irregular preservation of the epithelial cells, which in some instances showed a very distinct nucleus and cell-boundary; in others the cornification had gone on to a greater or less degree. The cells were forced apart in many places, and there were distinct signs of œdema. In certain places a reticulation of the cells was noticeable so that small vesicles in the upper layers were sometimes seen. This œdema was a striking feature throughout the whole epidermis in greater or less degree, and explained the partially developed crusts and moist scales on the surface of the lesion.

The stratum granulosum was nowhere apparent in its entirety, but here and there indurations of abnormal granulation were seen.

The whole of the rete Malpighii was increased in size, the upper layers showing strong evidence of œdema, the cells being separated and distorted. The nuclei were usually well stained, with the exception of "clumped nuclei" to be described below. Very numerous mitoses of varying forms extended from just above the basal cells to nearly the surface horny cells. Clumping of the nuclei was very prominent throughout the sections, beginning with the cells immediately above the basal layer and extending to the upper edge of the rete. Two to a

dozen nuclei, taking the stain in an indistinct manner, could be seen huddled together in the remains of a much enlarged cellular space with a clear space at the periphery. These appearances must be considered due to a mitosis, and were so prominent in all sections that their occurrence must be considered a characteristic feature of the affection.

(2) *Corium*.—The most prominent feature was an increase in the size of the blood- and lymph-vessels, suggesting at first sight a true angioma. This enlargement and dilatation of the vessels extended to the full depth of the section. In most instances the blood-vessels were filled with red corpuscles. In many there were numerous polymuclear leucocytes, which in some instances nearly filled the lumen of the vessels. The connective tissue of the corium showed a similar œdematous change to the epidermis. There was rarefaction of the collagen in the upper papillary layers, while the elastic fibres were practically absent or did not stain. The cell infiltration of the corium was pronounced. Plasma-cells predominated, the infiltration being grouped about the enlarged vessels, but these cells were also present in places where the vessels were not conspicuous. Some lymphoid cells and a few mast-cells with an occasional red corpuscle were mingled with the plasma-cells. A few polymorphonuclear leucocytes were seen about the vessels in the œdematous papillæ.

Sections made at later dates were practically identical. One made in September, 1911, showed greater epithelial proliferation with some epithelial pearls in the epidermis, but there was no distinct evidence of carcinoma. There were no abnormal signs below the corium.

CASE 2 (Bowen*).—The patient, a man, aged 52 years, a native of Scotland, was a cooper by trade. He had been seen by Dr. Bowen in 1907, and the condition seen in Case 1 recalled the circumstances. His lesion was on the outer side of the right calf, about 3 to 4 in. in diameter, and consisted of nodules from the size of a pin's head to that of a bean, many of which were confluent, others discrete and sharply defined. They were raised about $\frac{1}{8}$ in., the surface was flat, and many of the larger elements showed a papillomatous element. The colour was pale red. Some of the lesions were covered with crusts, and there was slight oozing on their removal. In some parts the lesions had joined, to form irregular plaques or portions of rings. The lesions itched slightly and were tender. The patient's general health was good. Temporary improvement followed the administration of potassium iodide, but deep freezing with solid carbon dioxide gave good results. The lesions, however, had not entirely disappeared when the patient was last seen.

The histological examination showed the same features. There was marked hypertrophy of all the layers of the epidermis, with separation of the outer part of the horny layer into scales and lamellæ with numerous deeply stained nuclei. In many places the round, deeply stained nuclei were surrounded by a capsule-like envelope with a clear space outside resembling the modified epithelial cells seen in Darier's disease.

The stratum granulosum could not be made out.

The rete was greatly thickened and there was a marked mitosis in all its layers. "Clumping" of nuclei was found in an early lesion. Vacuolisation, as seen in Paget's disease, was present to a great extent in the upper layers of the rete, and

* *Journ. Cut. Dis.*, 1912, p. 241.

there was distinct evidence of œdema. The changes in the corium were a moderate enlargement of the superficial vessels with a moderate collection of cells about them.

CASE 3 (J. Darier*).—The patient, a woman, aged 68 years, a native of Burgundy, was first seen in March, 1912. She was of weak constitution but not cachectic. There was no evidence of syphilis, tuberculosis or other disease. She had suffered for more than ten years from crusted plaques. Three active lesions and a scar were present at the time of examination.

(1) On the left buttock a plaque the size of the hand, of polycyclical outline, its edges made up of nummular brown crusts, its centre cicatrised and of varied tints. At first sight the lesion suggested an ulcerative tertiary syphilide of tubercular and circinate type. Further examination showed the crusts to be formed of epidermic lamellæ with dried serum; there was no sign of pus or of ulceration, but a red, eroded surface, smooth or slightly papillomatous in places.

(2) On the anterior border of the right axilla there was an oval plaque the size of a hen's egg, which had the appearance of a cornified papilloma or a *Nævus verrucosus*. Pieces of hyperkeratotic crusts 8 to 10 mm. thick could be removed with some difficulty. There was no underlying infiltration.

(3) An elevated tumour of the form and dimensions of a macaroon was situated on the back, on the right side at the level of the lower ribs. This lesion was more than a centimetre thick, of somewhat irregular surface, of a violet colour and covered with a thin crust. Corresponding to this tumour there was a single enlarged gland in the right axilla, firm and movable, the size of a small walnut.

(4) In the left groin a white, soft, non-adherent cicatrix produced by the excision of a former lesion. The patient had suffered from an intermittent seborrhœic eczema since childhood. A biopsy was made, and the appearances of the sections warranted the advice to excise all the lesions. This was done, and the lesions cicatrised with the exception of a small remaining crust over the lesion on the back. No other lesions had appeared.

CASE 4 (J. Darier).—The patient, a woman, aged 39 years, a domestic servant, was admitted to the Hospital St. Louis, June, 1913. Typhoid at age of twelve, but no history of tubercle or syphilis. Operation for uterine fibromata three years before followed by phlebitis of both extremities. Four years before a warty patch appeared on the inner aspect of the right ankle, and had slowly enlarged. Treatment by X-rays, etc., without effect.

A dozen lesions were found on the skin, most of them unknown to the patient as they caused no abnormal sensation. The largest lesion was on the inner aspect of the right ankle, a plaque of irregular form and polycyclic outline, made up of a central eroded projection forming a tumour, surrounded by more or less confluent nummular papules. The central tumour had three lobes and was the size of a broad bean or small chestnut, and was 6 to 8 mm. in height. It was of firm, almost hard consistence and was covered by a thin adherent crust, beneath which was found a red, eroded, somewhat irregular non-bleeding surface. The rest of the plaque was formed of confluent, flat, discoid papular elements, rounded, oval or square, with a smooth flat surface, sometimes scaling slightly in the centre. There was no subjacent induration and the plaque was freely moveable over the underlying tissues.

* *Ann. de Derm.*, 1914-15, p. 449.

The remaining lesions were of three types :

(1) Red, scaling patches, sharply circinated, flat, level with the surrounding healthy skin, and covered with fine white adherent scales. There was no thickening nor induration. One near the umbilicus measured 3.5 by 2 cm. Two similar smaller patches were on the right side of the trunk.

(2) Yellow patches, oval and sharply defined, covered with fine scales, the size of a finger-nail. In these the skin appeared slightly atrophic.

(3) A brown, sharply defined spot on the back, the size of a two-franc piece, free from redness and desquamation. Radiotherapy removed the chief lesion on the ankle, but in consequence of a painful resistant ulcerative dermatitis, probably due to the treatment, the ulcer was treated by super-heated air at 600° F. under anaesthesia and cured.

CASE 5 (Danel, of Lille, described by Darier, *loc. cit.*).—The patient was a man, aged 65 years. The lesions were :

(1) An oval ulcer of the forearm, granulating and bleeding freely. It had existed for six months, and was situated on a large cicatrix.

(2) Papular squamous lesions with infiltrated base scattered over or grouped on the same scar. These lesions had existed for forty years, and their recent transformation had given rise to the ulcer.

(3) An enlarged right axillary lymphatic gland. While under observation this gland had enlarged and broken down and assumed the appearance of a rapidly progressive malignant tumour. This was found by histological examination to be an epithelial cancer.

The histological appearances of these three cases were described in detail by Darier. Numerous pieces of the various lesions were examined. The following *résumé* indicates the chief points observed :

(1) Typical lenticular or discoid lesions. The epidermis was markedly thickened, the basal layer being sometimes quite normal, in other places containing vacuolated cells, either dwarfed or deformed. The rete was composed of unequal cells, many having a clear perinuclear space with nuclei either retracted, deformed or of great size, and often two or three in number. Besides the vacuolation of the endoplasm, the rete cells were not specially altered and not detached from one another. Here and there numerous elements four or five times the size of an ordinary Malpighian cell were seen, more or less dropsical or globular, sometimes appearing to be intra-cellular or surrounded by a double membrane. They contained a nuclear mass which was sometimes a fusing of from four to eight nuclei, sometimes a mass of nuclear granulations. Exceptionally cells which had been cornified or colloid were seen.

The horny layer was thickened and often raised in lamellae, in some places devoid of nuclei, in others parakeratotic, while in some places there were round or ovoid corpuscles, sometimes incapacitated. The horny layer was dry and scaling or infiltrated with serum to form crusts. The papillary layer was the seat of a diffuse cellular infiltration, sharply circumscribed below, composed of lymphocytes and swollen connective-tissue cells. Polynuclear leucocytes were very rare. The blood-vessels were somewhat distended.

(2) Flat or slightly elevated patches with sharp outlines. The horny layer and rete were thickened. The inter-papillary prolongations were increased in size. The basal cells contained pigment. A slight general alteration of the Malpighian cells was noted. The cells were small and irregular, the protoplasm oedematous,

the nuclei often contracted or very large, and usually surrounded by a clear space. This vacuolisation was specially noted in the granular layer. Round bodies, nucleated and non-nucleated, were seen in the horny layer. Moderate lymphocytic infiltration in the papillary layer.

(3) Simple hyperkeratotic plaques. Some of the lesions showed an intense hyperkeratosis, consisting of a stratification partially parakeratosis with occasional ovoid or rounded bodies (dyskeratosis). The rete was of unequal thickness. The papillary layer showed abundant infiltration, chiefly of plasma-cells.

(4) Hyperkeratotic and vegetating plaques. These closely resembled what is seen in arsenical keratosis, chronic X-ray dermatitis and *Xeroderma pigmentosa* when the lesions are about to become carcinomatous. The plaques were made up of a thick crust composed of hyperkeratons, parakeratons vesicles and a network infiltrated with dried serum. Under this the epidermis was much thickened and irregular; proliferation both towards the surface and downwards. The rete showed much parenchymatous oedema, with distorted and depressed cells of irregular distribution containing clubbed or multiple nuclei. The papillary layer was invaded by the proliferation, and there were remains of the plasma-cell infiltration. The subjacent corium was atrophic.

(5) Stage of cancer.

CASE 6 (J. T. Bowen*).—The patient was a man, aged 51 years, a native of Maine. There was nothing in the personal or family history of importance. There was no evidence of syphilis. The lesions of the skin had begun thirty years before as a small papule on the chest.

When seen November, 1914, there were a dozen or more lesions on the trunk, front and back. The largest plaque was irregularly rounded, 6 in. in diameter, situated on the right side of the chest in front and involved the region of the nipple. It was well defined and slightly reddened in colour.

CASE 7 (J. Dariet†).—The patient was a male, aged 70 years. He was admitted to the St. Louis Hospital suffering from an extensive vegetating dermatosis, with ulcers and erosions affecting the whole of the face with the exception of the nose and chin. The invaded areas were covered with an agglomeration of globular swellings a centimetre high with deep sulci, presenting in parts an appearance suggesting the cerebral convolution. The colour varied from an almost normal tint to yellowish red and dull red. Milium-like bodies were present at a number of points. The consistence of the tumours varied. In some parts they were soft and oedematous, in others hard. They were free from osseous attachment. On the left fronto-parietal region there was a depressed cicatrix, in the centre of which lay bleeding and diphtheroid ulcers with ill-defined edges. On the left temple and parotid region was a large swelling whose base mingled with the neighbouring vegetations. The whole of the vegetating area was well defined from the normal skin by a sinuous and irregular margin. The glands behind the left sterno-mastoid were palpable, small, hard and moveable. The Wassermann reaction was strongly positive.

The patient had been under the care of Dr. Dubreuilh, at Bordeaux, and he, having diagnosed epithelioma, had treated the lesions with heavy doses of X-rays. After an attack of erysipelas which had followed vaccination (against smallpox)

* *Journ. Cut. Dis.*, xxxiii, 1915, p. 787.

† *Ann. de Derm.*, 6^e serie, i, No. 2, p. 49.

the patient suffered from severe bronchitis. He was again submitted to the X-rays without apparent benefit. Severe hæmorrhages which were difficult to control brought about his death.

At the partial autopsy cancerous infiltration of the cervical glands was found. Metastases of small size were present in the lungs, and there was a small sub-peritoneal growth on the greater curvature of the stomach. No other cancerous nodules were found.

The histological examination showed the features described by Darier in his previous cases. The growth was composed of "meta-typical Malpighian epithelium." The cells were voluminous, often oedematous and had unequal nuclei, of which a great many were giant, multiple, deformed—the condition claimed by the author as "dyskeratosis." The same type of structure was found in the skin, the glands and the visceral metastases.

AUTHOR'S CASE.

Multiple Basal-celled and Squamous-celled Cutaneous Carcinomata with Pre-cancerous Hyperkeratosis.

Mrs. A. H— was sent to the Skin-Department of the London Hospital on November 20th, 1912, by Dr. Avery. She was then aged 57 years, and a widow. Her husband had died of abdominal cancer, one sister had died of phthisis, one brother and sister were living. Of her four children three were alive and well, and one had died in infancy of whooping-cough. When thirty she had an early miscarriage. She stated that in 1907 she was operated on in St. Bartholomew's Hospital for gastric ulcer by Mr. Harrison Cripps. The miscarriage at thirty was followed by a disseminated eruption, which lasted until she came to hospital, *i. e.* from the age of thirty to fifty-seven. This affection was diagnosed as psoriasis. During this period she took a "white medicine like water" for months at a time.

In 1912 she complained that for two years a red pimple had been forming on the forehead above the left eye. It had gradually enlarged. She had scratched it with a comb. This had made it bleed and it had never healed up. For the last six months it had grown more rapidly. Other tumour lesions had appeared on the forehead in the last twelve months. The largest and first tumour was about an inch across, oval in shape and raised above the surface, soft and tender to touch, the raised edge reddish and rolled, the surface ulcerated and covered with blackish crusts. There were similar smaller lesions at the hair margin of the left forehead. Radium was applied to all three nodules and to a new one that

appeared in July, 1913. They were noted as having disappeared, and she ceased attending on May 5th, 1914.

The patient re-appeared at Out-Patients on May 11th, 1920, complaining of a growth on the left arm. Other and multiple unusual skin-conditions were then noticed, and she was admitted for further clinical and microscopical investigation.

The patient, now aged 65 years, is a feeble, grey-haired, edentulous, kyphotic woman. Her *forehead* presented a broad crescentic area of scarring on the left side at the hair margin, extending from the mid-line to the ear, varying in width from 1 to 5 cm. with an irregularly rounded edge. The greatest width was in front of the left ear. In the scarred area were a few palpable, pin-head, slightly raised thickenings. On the right side of the face outside the right eye were two wide, white, glistening, shallow, supple scars obviously left after old radium treatments. At the very apex of the forehead at the hair margin was a depressed area about 1 cm. in diameter, slightly oval, and having at its lower periphery a raised, firm, non-ulcerated nodule. This was removed for investigation, but unfortunately became lost. A photograph of her condition in 1912 is preserved in the hospital records.

On the *left arm* was a tumour of four months' duration—from February, 1920, to June 19th, 1920. This had steadily increased in size. It was situated on the posterior and upper part of the left arm just external to the biceps and below the deltoid muscle. It appeared as a nodular, irregularly-shaped excrescence. A gland in the left axilla was enlarged. Microscopically the tumour proved to be a squamous-celled carcinoma. The axillary gland was inflamed but showed no secondary deposits. The incisions healed by first intention.

The right thigh showed a button-like skin-tumour, with a broad base, rounded edge and granular surface, 1.5 cm. in diameter, which on removal proved also to be a squamous-celled carcinoma. The patient is positive in stating that the duration of this tumour was four to five years.

Her *back* presented several interesting lesions, all of which were noted to have commenced as pimples soon after the forehead was affected. They have given her no pain, itching has been a constant feature, and they have steadily enlarged as time went on. These lesions were distributed in the lumbar and dorsal regions (illus-



DR. SEQUEIRA'S CASE OF MULTIPLE CARCINOMA.
"PRECANCEROUS DERMATOSIS OF BOWEN."

trated in coloured plate), on the right and left side of the gluteal clefts, below the left iliac crest and inside the right buttock. The central and largest area on the back was raised and rugose with a centre at least 5 cm. above the surrounding skin; the surface was broken into small red lobules. The longest protuberance overhung its base with a rounded exuberant margin. The lower portion of this excrescence was flat and closely resembled the other lesions on the back. These other lesions were rounded, freely moveable and not palpably thickened. Their surface was red and glazed, slightly puckered and scaling a little. The margins were flat, narrow, brown and well-defined. The scaling disappeared after applying simple ointments.

A note (J. H. S.), July 20th, 1920, states that two patches in the small of the back look on the surface not unlike Paget's disease, but are not thickened. A microscopic report of the edge of one of these (P. Í. S. D. 825) showed great keratosis and thickening of epidermis, and elongation of epidermal papillæ in the edge of a chronic inflammatory ulcer of the skin of the back; no actual carcinomatous infiltration, precancerous. The largest lesion was removed by diathermy.

On the *front of the trunk* were two small rounded lesions: (*a*) under the right breast—twelve months' duration; (*b*) under the left clavicle—eighteen months' duration; this latter was excised under a local anæsthetic, November 29th, 1920. It was oval, 1 cm. in diameter, flat and greyish with a slightly raised brown, palpably bended periphery, not adherent below the skin.

On the front of the right knee was a pinkish raised plaque $1\frac{1}{4}$ in. by $\frac{3}{8}$ in., freely moveable. The surface was slightly granular, not shining, and free from scales.

(*To be continued.*)

SOME REMARKS ON THE DEVELOPMENT OF
THE LEISHMAN-DONOVAN BODIES.*

J. E. R. McDONAGH, F.R.C.S.

IN 1915 (1), I showed the microscopic specimens of a case before this Section, labelled *Coccidiosis avenerea*, which were illustrated later in my *Biology and Treatment of Venereal Diseases* (2). The clinical history of the case was shortly as follows: A man, aged 22 years, living in the North-West Frontier Province (India), fell while playing hockey and injured his knees and right elbow. The knee wounds rapidly healed, but at the periphery of the elbow wound a rash developed, followed by a "go of fever" which lasted for three weeks. When I saw the patient some months later the elbow wound had healed in the centre, but around were discrete granulomatous papules not unlike syphilitic papules surrounding a healed primary sore. There were also similar papules affecting the *Glans penis*, the corona and the under surface of the prepuce. There was no evidence of syphilis, and the complement fixation test was negative. Histologically the papules were found to be of lymphatic origin. Each papule was sharply circumscribed and divisible into three areas: an outer layer of plasma cells, then a layer of mixed plasma cells, lymphocytes and endothelial cells, while the centre was occupied in the main by endothelial cells. In the intermediary zone were to be found intra- and extracellular parasitic bodies, which I took to be the asexual development of a coccidial protozoon. I forgot all about this case till Dr. L. D. Shaw gave me a case of "Aleppo button" (Fig. 1) from which he had obtained in film the Leishman-Donovan bodies. This patient had a central raised lesion on the arm, not unlike a papulo-erosive chancre in which there had been no loss of surface. Around and radially situated were discrete papules which had undoubtedly arisen by direct extension, presumably by the lymphatics, from the central and primary lesion. Dr. Shaw excised the whole, and I cut several sections of both the central and the peripheral lesions. The

* Paper read at a meeting of the Dermatological Section of the Royal Society of Medicine on February 17th, 1921.

histological picture of the central lesion was not unlike the type of syphilitic primary sore just mentioned, except that it was much more sharply circumscribed; in fact there was practically no cellular infiltration around the spurious fibrous capsule which encased the lesion. The lesion was well divided into the three areas above described, and in the middle zone I found parasitic bodies which at once reminded me of the case I had described in 1915. In the central endothelial



FIG. 1.—Aleppo button.

zone there were a few areas of necrosis in which several Leishman-Donovan bodies were to be discerned. The peripheral lesions had the same structure in strand form (Fig. 2). The central endothelial zone was very well marked and appeared to be of lymphatic origin. The parasitic bodies were to be found in this zone, and only on the surface where the epithelium had been destroyed were areas of necrosis to be found. The characteristic features of the lesions were undoubtedly the tri-zoned arrangement and the minimal amount of inflammation which occurred around.

About the same time I had under my observation a man, aged 52 years, from Mysore, who for over twenty years had never been free from cutaneous lesions, which appeared suddenly, as small papules, to become furuncles, then ulcers, and finally they healed up when the crust had fallen off, leaving a deepish scar. The patient had had altogether over 200 lesions, but they had never prevented him from doing his work. Being a medical man he had been seen by everybody,

but the diagnosis of Leishmaniosis had always been considered untenable. I persuaded the patient to let me excise a lesion when it was two days old, and I cut serial sections of the same with the following result (Fig. 3): In the centre the epithelium had been thinned down and underlying it was an area of necrosis in which Leishman-Donovan bodies were to be found. On either side the epithelium was hypertrophied, but below it and separated from it by a diffuse small round-celled infiltration was a dense zone of discrete and well-staining endothelial cells, which also formed the base of the necrotic area. Descending into the subcutis, this endothelial zone was found to taper off into a blood-vessel, the wall of which was composed in the main

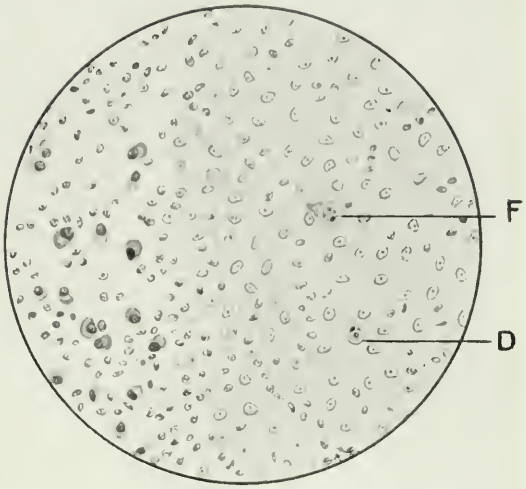


FIG. 2.
(For description see foot of p. 185.)

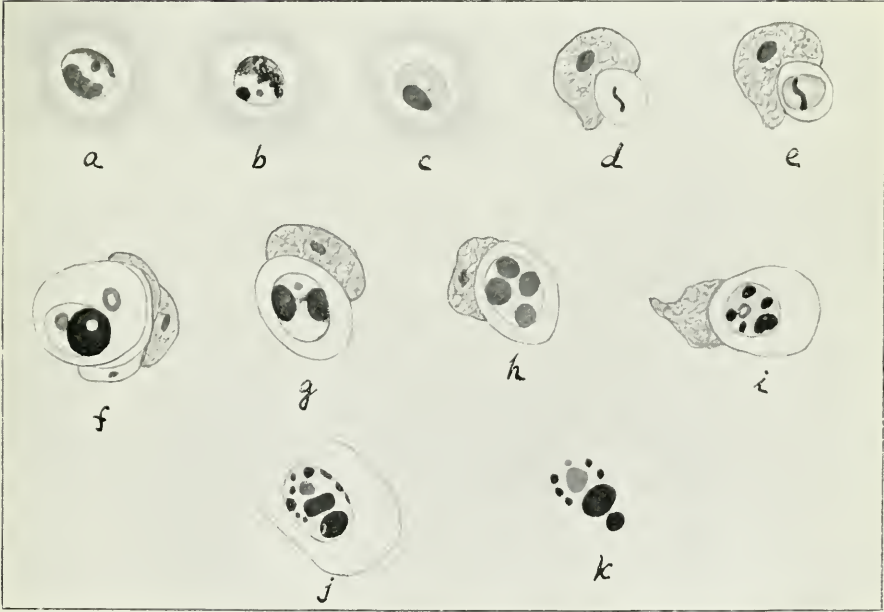


FIG. 4.
(For description see foot of p. 185.)

TO ILLUSTRATE MR. McDONAGH'S ARTICLE ON THE DEVELOPMENT OF THE
LEISHMAN-DONOVAN BODIES.



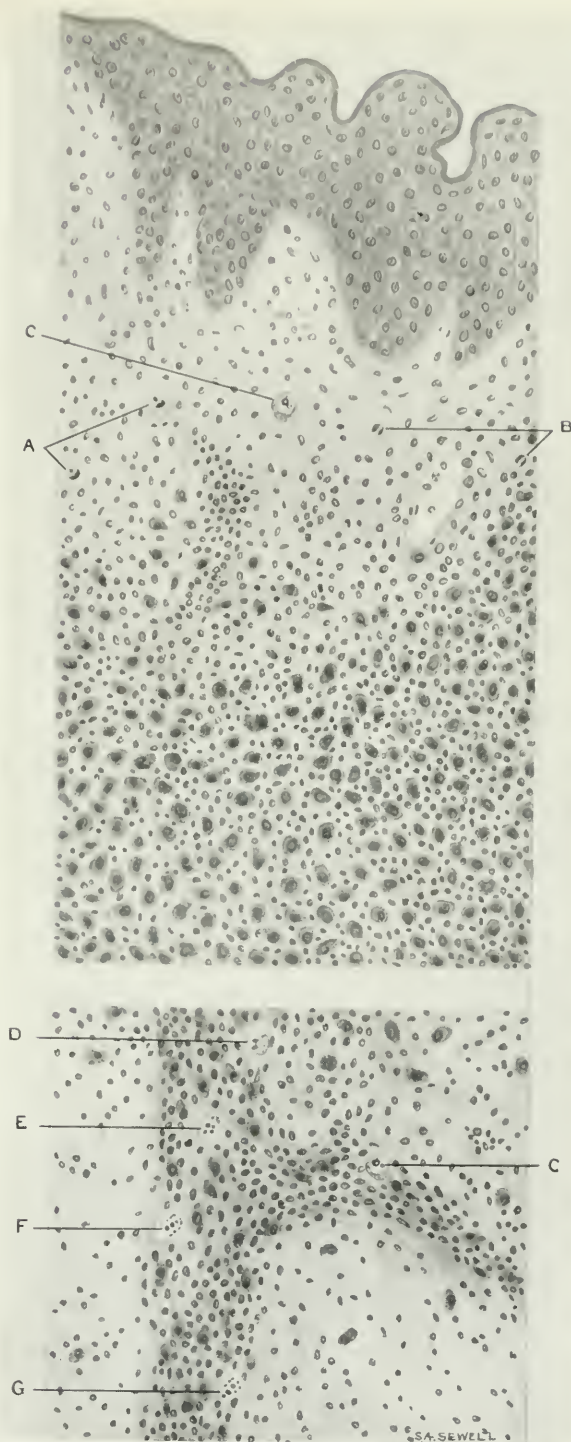


FIG. 3.

(For description see foot of p. 185.)

TO ILLUSTRATE MR. McDONAGH'S ARTICLE ON THE DEVELOPMENT OF
THE LEISHMAN DONOVAN BODIES.

of small round cells. The intra- and extracellular parasitic bodies were to be found mostly in the mantle of this blood-vessel, and sparsely in the zone between the epithelium and the endothelial cells on either side of the necrotic area.

Another type of case I also had under observation affected a man, aged 35 years, who contracted a sore on his left cheek in Baghdad. When I saw him some five months after he had been infected he presented an irregularly heaped-up ulcer not unlike a frambœsiform syphilide. The lesion was well infiltrated at its base, and around and in the periphery distinct papules were to be seen. I removed a small portion of skin just outside the border of the main lesion, and it presented the same histological features as the other three cases, except that the endothelial-celled infiltration was more diffuse, and here and there arranged in the form of giant-cells. Around the giant-cells many intra- and extracellular parasitic bodies were to be found. All the sections were hardened in absolute alcohol embedded in wax and stained with pyronin and methyl-green. By this method the Leishman-Donovan bodies appear as round or oval cells which contain a big nucleus at one pole, a small nucleus at the other pole, and a nucleolus or blepharoplast in the centre (Fig. 4). The cell is usually found to be surrounded by a clear space or halo which I take to be

DESCRIPTION OF FIGURES 2, 3, AND 4.

FIG. 2.—Section of a peripheral lesion from the case of Aleppo button (Fig. 1). The section shows the zone of contiguous endothelial cells, which at first sight simulate a malignant epithelioma, enclosing two of the intracellular phases of the *Leucocytozoon leishmanii* (D, F). Around the endothelial-celled zone are small round cells and plasma cells.

FIG. 3.—Whole section through a lesion which had been macroscopically present for two days. Below the epithelium is a zone of small round cells and intra- and extracellular parasitic bodies (A, B, C). Beneath is a zone of discrete endothelial cells between which are numerous small round cells. Beneath this lies a blood-vessel, the mantle of which consists of small round cells, discrete endothelial cells, and intra- and extracellular parasitic bodies (C, D, E, F, G). A, B. Adult Leishman-Donovan bodies, showing the macro- and micro-nucleus and blepharoplasts, and the characteristic halo or unstained space around the cell. C. Parasitic body developing in an endothelial cell. D. Binary fission of the early intracellular phase. E. First subdivision of the intracellular phase. F, G. Spore-cysts.

FIG. 4.—a, b. Leishman-Donovan bodies showing female and male nucleus and blepharoplasts. c. Ditto, with male and female nuclei united and blepharoplast as clear spot. d. Body within an endothelial cell. e. Ditto, showing developed blepharoplast hiding nucleus. f. One body developing in an endothelial cell. g. First stage in subdivision of body. h. Second stage. i. Third stage. j, k. Spore cysts.

of the same nature as the so-called capsule of capsulated bacilli. This halo is very characteristic of protozoal bodies studied in section, and is, I think, produced by the antagonistic chemico-physical properties exhibited by the parasite on the one hand and the cells of the host on the other hand. If stained in such a way as to allow the parasitic nuclein to exhibit its affinity for methyl-green only the blepharoplast stains with pyronin. The blepharoplast which I take to be the nucleolus may be situated anywhere within the cell, and sometimes it covers the bigger nucleus. In its centre a highly refractile non-staining dot is usually to be seen, which is also always visible in the nucleus when the nucleus and nucleolus appear to be one. The small nucleus, I cannot help thinking, is an abortive male body, because the Leishman-Donovan body itself so closely resembles the female gametocyte of the *Leucocytozoon syphilidis*. The female gametocyte of the syphilitic coccidial protozoon not infrequently is to be found with what I originally considered to be two blepharoplasts. One of these so-called blepharoplasts is discharged from the cell before the cell becomes a gamete, while the other functionates as a nucleolus and becomes discharged as one of the polar bodies after fertilisation. I am tempted to hazard the opinion that the expelled blepharoplast is replaced by the male gamete or *Spirochaeta pallida*, that the small nucleus of the Leishman-Donovan body corresponds thereto and that it is not expelled, in order to take the place of the male element. The Leishman-Donovan body is next seen in an endothelial cell. Some endothelial cells appear to contain more than one, but as far as I can determine only one fully develops in the cell, while the others die and become disintegrated. The pictures in most text-books (3) of so-called mononuclear cells containing several Leishman-Donovan bodies in their protoplasm, I have never been able to verify in section. The host cell is, I believe, always the endothelial cell, and once a parasitic body has found its way therein that characteristic ballooning of the protoplasm of the endothelial cell, with its unstained protoplasm and clear space between its outline and the border of the parasitic body are never to be missed. The text-book pictures, I believe, depict the bodies lying on but not in the host's cells. The Leishman-Donovan body inside an endothelial cell may not differ from one viewed outside, but more generally the small nucleus will be found to have become part of the large nucleus, while occasionally

the parasitic body will appear to be no more than a streak of nuclein. This last-named body is very deceptive, but working with a very high power ($\frac{1}{18}$ oil immersion) and with Nicol's prisms I have been able to determine that, except for this streak of nuclein, the rest of the nucleus has been obscured by the bright, highly refractile dot which has increased so much in size as practically to cover the whole nucleus. An increase of nucleolar substance always denotes activity within the cell. Proceeding, the whole cell and the nucleus especially increase in size, and the latter divides. Each part of this subdivision divides and subdivides till the cell resembles a spore-cyst. From the stage of the first division of the nucleus to the stage of the complete subdivision, the red pyroninophil body or nucleolus with the highly refractile spot in its centre is to be found in the cell. Sometimes one of the nuclear masses contains a highly refractile unstained dot in its centre. Presumably the function of the nucleolus is to regulate the development of the nucleus. By the time the complete subdivision of the nuclear material has been reached the endothelial cell is no more than an empty case of degenerated material which gives the appearance as if the parasitic cell was extracellularly situated. The final stage of the nuclear subdivision never goes so far as is reached by the zygote of the *Leucocytozoon syphilidis* in its spore stage, which rather inclines me to take the view that each of the nuclear masses develops extracellularly into a Leishman-Donovan body.

In the several clinical types, although there appears to be no difference in the development of the organism, there is a distinct variation in the size of the intra-cellularly deposited bodies. Whether this accounts for the clinical differences, and whether we are dealing with a similar development of different types of protozoa or not, are problems which will have to be solved in the future.

I have never seen what might be described as a division of a Leishman-Donovan body. The filament or thread which is seen in cultured bodies arising from the smaller nucleus tends, I think, to support my view that this mass of nuclein is of male heritage. Although cultures are instructive, we should not assume that the development of the bodies *in vitro* runs parallel with that *in vivo*. From syphilis, so far, only the spirochaetal stage can be cultured, and it has been cultural experiments which have prevented many from regarding it as possible that the *Spirochaeta pallida* is only the

adult male of a coccidial protozoon. The histological pictures are interesting in so far as the structural alterations met with are also encountered in syphilis, tuberculosis and other granulomata. Clinically the disease is very like syphilis, as in most cases there appears to be a primary lesion which is followed, months and years afterwards, by other lesions. Furthermore, the recurrent lesions are more ulcerative than the primary lesion, which is likewise the case in syphilis—gummata for instance.

Finally, from the investigations undertaken, I cannot help suggesting that the development described is that of the asexual cycle of a coccidial protozoon. If correct, then the Leishmann-Donovan body is the adult or mature form of an asexually reproduced protozoon, in which case the *Leucocytozoon leishmania* would be a suitable name for it. This would give us syphilis as *Coccidiosis venerea* and Leishmaniosis as *Coccidiosis avenera*.

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PHINEAS SIMON ABRAHAM.

PHINEAS SIMON ABRAHAM was born at Falmouth, Jamaica, in 1846, and was the son of the late Phineas Abraham, J.P., formerly of that island. He was educated at University College School, London, and later at University College, taking the degree of B.Sc.Lond., with the original intention of becoming a chemical and mining engineer. He attended also the Royal College of Science, Dublin, where he was a Royal Exhibitioner.

Entering Trinity College in that city he was First Senior Moderator in 1871, Gold Medallist in Natural Science, and obtained the M.A. at the University.

He entered St. Bartholomew's Hospital Medical School with a Science Exhibition and Scholarship in 1876, and obtained the Diploma F.R.C.S.I. in 1880, having in the previous year been appointed Curator of the Museums of the Royal College of Surgeons, Dublin, and subsequently a Member of the Court of Examiners. He also studied for some months at the École de Médecine, Paris, and Clausthal, Germany.

On graduating in medicine, M.D., T.C.D., in 1886, he obtained the Lectureship in Physiology and Histology at the Westminster Hospital Medical School, which he held for five years.

It was about this time that he developed an interest in dermatology, and became a Clinical Assistant at the Hospital for Diseases of the Skin, Blackfriars, eventually being elected Surgeon to the Institution. In 1889 he was selected as Medical Secretary to the National Leprosy Fund, and represented this country at the International Lepra Conference in Berlin, 1897, editing the *Journal of the Leprosy Investigation Committee* and contributing an article thereon to Hillis's *Leprosy in British Guiana*. He also published contributions to Allbutt's *System of Medicine* and to a *System of Syphilis*, and edited *Unna's Dermatological Writings*, published by the New Sydenham Society in 1893.

Abraham was one of the original founders of the Royal Academy of Medicine of Ireland, and took an active part also in founding the Dermatological Society of Great Britain and Ireland in 1894, becoming Vice-President in 1901. This Society eventually amalgamated with

the Dermatological Society of London, founded in 1882, and was incorporated with the Royal Society of Medicine, constituting the Section of Dermatology.

In 1892 Abraham was elected Dermatologist to the West London Hospital, an appointment he held for many years. He was President of the West London Medico-Chirurgical Society in 1910-11, and during his term of office founded and endowed the Triennial Gold Medal awarded by that Society for distinguished services, or for exceptional heroism in the discharge of medical duties. Previous to this he had been President of the Irish Medical Schools' and Graduates' Association, and in 1910 presided over the Dermatological Section of the British Medical Association's Annual Meeting in London.

Abraham was a popular member of the Savage Club and a prominent Freemason, the founder of more than one lodge, and finally an officer of the Grand Lodge of England.

This enumeration will suffice to convey the chief activities of one whose life and energies were largely spent in organisation and progress. He was proud of his profession and of his own work for it and in it.

Abraham possessed the quality of originality, but with it he continued many of the older methods of treatment in hospital and private practice, which he was satisfied were of practical value, in spite of the occasional criticisms of his dermatological colleagues. He was a successful clinician, the result largely of attention to details, and spared no pains in dealing with cases which, although of limited pathological importance, required persistent personal application and help.

Abraham was an enthusiast, as his record shows, holding an honourable place among his contemporaries and loyal to his convictions, but when his opposition was aroused, even to vehemence, no lasting personal feeling or resentment was allowed to remain, and soon the old spirit of friendliness returned—perhaps to a larger degree.

His geniality, always a leading characteristic, but especially towards young men, was a trait which all who knew him recognised. He had none of the lofty indifference with which the middle-aged man often regards the younger generation, but was always anxious to learn from and assist them. This was notably the case wherever his interlocutor was possessed of any special branch of knowledge.

Abraham was sympathetic in nature and hospitable withal, assisting many charities in the practical way that the fortunate possession of means from the earliest enabled and pleased him to do.

His sense of humour was not inconsiderable, as the writer, with an intimacy dating from Abraham's student days at St. Bartholomew's, can affirm, and notably when "taken for an Irishman," which always amused him.

That Abraham led a busy life was patent to all who knew him well, for he believed in Galen's maxim that "Employment is Nature's physician, and is essential to human happiness."

Abraham had many friends derived from all classes of society. He enjoyed considerable practice, especially amongst the Jewish community of which he was a member, until the time that his health commenced to fail many months ago. Early this year he secured a house at St. John's Wood, to which he removed with his family a few weeks only before his death, which took place on February 23rd in his seventy-fifth year.

After cremation his ashes were deposited in the Jewish portion of the cemetery at Golder's Green in the presence of sorrowing relatives and friends, including numerous old hospital colleagues and contemporaries.

He is survived by his widow and one daughter, a sister, who devoted the chief years of her life to his service, and two brothers, for all of whom true sympathy will be felt.

JAMES H. STOWERS.

ROYAL SOCIETY OF MEDICINE.

DERMATOLOGICAL SECTION.

MEETING held on January 20th, 1921, Dr. ARTHUR WHITFIELD, President of the Section, in the Chair.

Dr. GRAHAM LITTLE showed a case of *Lichen obtusus corneus*. The patient, a man, aged 57 years, had a remarkable condition of hands and tongue, of three months' duration. It had been remarkably itchy. Lichen obtusus he regarded as a variety of hypertrophic Lichen planus. The extreme circumscription of the lesions and the very horny nature of the skin justified the term "corneus" as part of the title. The tongue was the most remarkable feature: it had a macerated white appearance from tip to base, and when first seen the lips were also in a similar condition. Dr. Pringle, showing a similar case some years ago, likened the condition to an asbestos covering. The man was otherwise in fair health, and there was not the usual history of nervous shock.

Dr. SIBLEY did not agree with the exhibitor in describing this case as one of Lichen obtusus corneus. Cases which had previously been so described were discrete; this one was distinctly diffuse; the whole hands and forearms were affected. He had himself shown three cases to the Section in which the lesions were discrete, chronic and extremely irritable, and in all of those patients there was very little other evidence of Lichen planus about the body; what lesions there were were very isolated and ill-defined; nor had lesions been found in the mucous membranes, so much so that some authorities considered the obtusus corneus as a distinct disease from Lichen planus. He regarded the present case as one of Lichen planus becoming hypertrophic, and the condition of the tongue was most interesting.

Dr. GRAHAM LITTLE showed a case of *Morphœa guttata with arthritis*. The patient, a woman, gave a long and somewhat obscure history of Raynaud phenomena with arthritic conditions, and she had had ill-health for eight years. Her lesions were of a dead-white hue, and were grouped in a special way on the sacrum. On the trunk there were numerous very small white patches—guttate white spots. He was not absolutely certain that it was morphœa. The patient attributed the pigmentation present in some parts of the body to treatment which she had had for nervous pains—*i. e.* strong acetic

acid, which might have accentuated the skin-condition. An alternative diagnosis was vitiligo.

Dr. PARKES WEBER regarded the case as an example of a very rare form of vitiligo, that in which several of the white (leucodermatous) patches had in their centre a small mole. His attention was first drawn to the condition by seeing a patient shown by Sir Humphry Rolleston*; that patient was, however, likewise suffering from jaundice. In 1916 R. L. Sutton drew attention to the subject in his paper on "An Unusual Variety of Vitiligo."† Dr. J. L. Bunch had shown characteristic examples of the condition in England. It appeared that in cases of vitiligo the leucodermatous areas had sometimes a tendency to develop with congenital moles as centres.

Dr. WOODLEY STOCKER said that this patient was first taken ill eight years ago with diarrhoea and sickness, which she attributed to fish-poisoning, but there were no urticarial manifestations. She had nervous prostration. She became worse, and Raynaud's phenomena supervened in her hands; these lesions she regarded as broken chilblains. When she first came under his care four years ago she was suffering from much nervous exhaustion and weakness. As no physical defect was found it was attributed to neurasthenia, and she was treated with iron, cod liver oil and strychnine. As she did not improve under this treatment Dr. Stocker gave her hormotone tablets for about a year, and there was definite improvement. After their cessation she continued to be in a fair state of health. Later she again developed gradually increasing weakness, with difficulty in walking. The blood-pressure was 90, and the knee-jerks somewhat brisk. As he had had a case of neurasthenia which did well after acetic acid was applied to the spine, he tried this and got good results. She left off the acetic acid two years ago, and for eighteen months afterwards there was no staining such as was now evident. Last autumn she applied acetic acid again for a fortnight, but the previous April, *i.e.* before recommencing the acetic acid, she saw brown staining. He had considered it might be either morphea or vitiligo. She had arthritis in the spring, in the shoulders, arms and knees.

Dr. DORE showed a case of *oriental sore of lobe of ear*. The patient, a young man, aged 20 years, developed a hard swelling in the lobe of the left ear when he was on board ship on his way from Aleppo to Paris. He was not conscious of having had any insect-bite and there was no history of direct infection, but he stated that the condition was extremely common in Aleppo amongst the school children, and that the mothers purposely allowed their children to mix with infected subjects in order to get it over. In Paris he consulted a well-known dermatologist, who made a bacteriological examination, with a negative result. An ointment was prescribed, which caused the lesion to suppurate. When first seen by the exhibitor on January 10th there

* *Proc. Roy. Soc. Med. (Clin. Sect.)*, 1910, iii. p. 195.

† *Journ. Cut. Dis.*, 1916, xxxiv, p. 797.

was an inflammatory swelling of the lobe, which was enlarged to twice its normal size and had a somewhat elastic feeling to the touch as if it contained fluid, although none was present on puncture. The skin over the tumour was red and slightly nodular in parts, but there was no ulceration. Films from the fluid obtained by puncturing the swelling with a needle showed large numbers of Leishman bodies. A Sabouraud pastille dose of X-rays through a 0.25 mm. aluminium filter had been given, following the suggestion of Dr. F. C. Ormerod, who had reported 84 out of 130 cases in Mesopotamia cured by a Sabouraud unit of X-rays.* In view of Dr. Castellani's opinion that the disease becomes rapidly generalised, the question arose whether it was necessary to resort to injections of antimony or emetine at once. The patient had had some fever, but he attributed this to Aleppo fever, which was considered to be the same as malaria.

Dr. BUXCH showed a case of *anomalous granuloma*. The patient was a man, aged 39 years, with a granuloma on the upper lip. He had been under the exhibitor's care many months for an affection of the hand, which had been badly burned by X-rays, applied with too much zeal, for hyperkeratosis of the palm. The lip lesion was somewhat hard to the touch, but not very definitely indurated; it had never ulcerated, and at no time had there been enlarged glands, sore throat or a rash. The Wassermann reaction, however, was strongly positive in all dilutions. The man denied having had any skin or other affection before. No biopsy had, so far, been performed. It could not be a primary chancre, as there were no confirmatory symptoms, and the other possible diagnoses were tubercle or epithelioma. Dr. Adamson told him he had a patient—a man of the same age—who presented all the appearances seen in this patient, and on excision of the growth it turned out to be an epithelioma. The man appeared to be otherwise healthy; no tubercle could be detected in him, and there was none in the family.

Dr. J. H. SEQUEIRA showed a case of *extensive nævus of the type Nævus unius lateris*. The patient was a single girl, aged 23 years, who looked very young for her age, was rather backward, and was so

* "On the Treatment of Oriental Sore by X-rays." F. C. Ormerod, *Lancet*, October 30th, 1920, p. 893.

nervous that her mother accompanied her to and from business. Her mother was said to have been badly frightened—she was actually burned—when she was three to four months pregnant. The girl was a full-time child; she was in bed at the age of eighteen for six months with rheumatic fever, and now had well-compensated mitral regurgitation. The lesions, which appeared as close-set, blackish, horny follicular thickenings of varying size, tender in places, were distributed over the right side of the face and neck, the left side of the face, neck, trunk, upper and lower limbs. In the thin skin of the affected regions were many large comedones. A slide shows a very thin epidermis with great follicular hyperkeratosis—long columnar cells forming the basal layer—and a notable absence of any inflammatory reaction in the corium. The tender areas appear to be due to inflammation caused by secondary septic infection, due to rubbing.

DR. PRINGLE mentioned an admirable photograph of an identical condition in the November number of the *British Journal of Dermatology* for 1896.* The case depicted was described by Dr. Selhorst, of the Hague, under the title of "Nævus acneiformis unilateralis."

THE PRESIDENT said this was a very rare type of nævus and quite different from the ordinary mole, which might also be distributed more or less according to the segments. It was curious how moles differed in their histological characters. There seemed to be three types: one with the columns and masses of submerged cells, a second in which there were papillomatous overgrowths, no submerged cells, and little or no hyperkeratosis, and a third, to which this case belonged, in which there were no submerged cells but marked hyperkeratosis. He asked Dr. Sequeira if he had examined any of the comedo-like bodies present in this case for the presence of the microbacillus. He did not suggest this in relationship to a possible seborrhœa, but because of the severe atrophy of the skin. In deep scarring of the skin they were, of course, all familiar with the large comedo which was occasionally present, and in these he knew from his own examinations that microbacilli were present. He believed that this was due merely to horny stagnation. Apparently in any nice pocket of stagnating horny cells which underwent fatty changes the microbacillus found a suitable habitat, and he thought that if they were present in this case it would be evidence that these comedo-like bodies were the result of stagnation rather than of hyperkeratosis. These cases were so rare that he had never had one under his care.

DR. J. H. SEQUEIRA (in reply) said he had not yet had an opportunity of staining for the acne bacillus, but in another type of comedo, which occurred in children, after rubbing with camphorated oil, the acne bacillus was not found.

THE PRESIDENT: In adults the acne bacillus is present in oil acne, but not in children.

* *Brit. Journ. Derm.*, 1896, viii, p. 419.

Dr. DORE showed a *case for diagnosis*. The patient was a man, aged 69 years, who had been a cooper by trade. The first thing he noticed was itching of the skin of the chest and then of the left arm and peri-anal region. This was followed by thickening and roughening of the skin in the two last situations, nothing remaining on the chest except a small scar. Two years ago raised, lumpy patches appeared on his left arm with a similar condition on the right side of the anus, and about the same time an ulcer developed in a corresponding position on the left thigh. When he came under observation there was a large area of lichenification of the skin of the left arm extending from above the flexure of the elbow about half-way down the forearm towards the extensor surface. The skin of this area was thickened and pigmented with marked exaggeration of the natural lines of the skin. There was also marked prominence of the follicles in the parts not lichenified. At the upper part of the arm there was a raised oval tumour about $1\frac{1}{2}$ in. in length with a rugose surface and a shallow ulcer in the centre. Below this, on the outer aspect of the arm above the elbow, there were two similar irregularly-shaped larger hypertrophic masses, neither of these being ulcerated. At the upper extremity of the gluteal cleft there was another small area of lichenification and some similar patches on the left leg. On the thighs, at the extreme upper and inner aspects below the anus, there were, on the left side, a large punched-out ulcer, 2 in. by $1\frac{1}{2}$ in., and on the right side, opposite to this, a raised hypertrophic mass covered by white macerated skin having a warty appearance. This papillomatous condition—which had now to a large extent cleared up as the result of antiseptic measures—with the thickening of the palms and fissuring of the tongue which were also present, suggested at first sight a possible diagnosis of *Acanthosis nigricans*. But the absence of pigmentation, except of that associated with the lichenification of the arm (also more pronounced at first) and of warty vegetations in the other flexures negatived this hypothesis. The only alternative that suggested itself was that the lichenified area on the arm was due to *Lichen planus*, with the development of enormous hypertrophy to account for the tumours, which, in the case of the ulcer, might have been modified by traumatism and sepsis. There were no definite *Lichen planus* papules discernible, and this was only put forward as a tentative diagnosis.

The PRESIDENT agreed with Dr. Dore's suggestion that the case might be one of very unusual Lichen planus. He hardly saw how this could be decided positively unless the patient would be obliging enough to develop a typical attack of that disease. He thought, however, it might be of use to examine histologically a piece of skin, not from the papillomatous overgrowths, but from the hyperkeratotic area below the elbow-joint. He had seen cases of Lichen planus with papillomatous lesions exactly resembling those in this case, and he thought the ulcer in the anal region might be accounted for by scratching and pyogenic infection. They were all familiar with the fact that in Darier's disease, another eruption due to epidermic overgrowth, ulceration only occurred in these hot, moist situations.

Dr. MACCORMAC showed a case of *multiple tumours of the scalp*. The patient, a man, aged 69 years, first noticed what he described as lumps on the forehead about twenty-five years ago; he stated they had been gradually increasing in size during the last thirteen years. Owing to his occupation as a platelayer on a railway he was subject to frequent injuries to the head, and to these he attributed his condition.

The lesions occupied the region of the hairy scalp and forehead and were very numerous, some thirty or more tumours being present. They varied in size, being on an average of the dimensions of a large pea. Some were solid, while others were obviously cystic. They gave rise to no unusual subjective sensations. The patient had also what was considered to be a rodent ulcer below the right eye; this had been recently removed by surgical means.

The lesions on the scalp resembled the so-called endotheliomata. The view that these growths were related to rodent ulcer was not completely confirmed in this case: the microscopical appearances and clinical course corresponded more closely to the Epithelioma adenoides cysticum of Brooke; an example of which this case would appear to be. The lesion below the eye, on the other hand, could not have been differentiated from rodent ulcer either by its appearance or from the microscopical section.

Sections from a tumour on the scalp showed masses of epithelial cells of the small type met with in rodent ulcer, with cysts, some of which contained a colloid-like substance, others appearing empty. In some parts of the growth there were well-formed blood-vessels, and the cellular growth had some appearance of taking origin in the vessel-walls. This origin from the walls of vessels was not very clear, and stress was not laid upon it.

Dr. H. G. ADAMSON said that some years ago he published in the *Lancet** a paper on the relationship between Brooke's Epithelioma adenoides cysticum and multiple rodent ulcer, and pointed out that they had the same histological structure—namely, that of a basal-cell epithelioma. He had also demonstrated that the scalp tumours often occurred in association with Brooke's disease and were also basal-celled epitheliomata. He believed that Brooke's Epithelioma adenoides cysticum and rodent ulcer were both embryonic pilo-sebaceous glands, in which the cell-growth had failed to differentiate and had remained of the basal-celled type. Rodent ulcer occurred later in life, when the cell-growth was less stable, so that (unlike the benign form of Brooke) it broke down and formed an ulcer.

The PRESIDENT thought the present case lent much support to Dr. Adamson's views. With some slight hiatus it was possible to trace the steps between the submerged mole, the benign epithelioma and rodent ulcer. At the discussion some time ago on tumours of the skin he had shown a series of slides illustrating this. He agreed with Dr. Adamson that they were all congenital in origin, though they might not become apparent until later in life.

Dr. ARTHUR WHITFIELD (President) showed a case of *lymphangioma of the tongue*. The patient was a little girl, aged 10 years. The condition of the tongue was known to have been present for twelve months, but he could not get any definite history as to how much longer than this. The tongue was slightly enlarged, and with fissures or lobes, but without soreness, and the surface shows four peculiarities: (1) Much enlarged papillæ; (2) papillomatous overgrowth with whitish horny tags, not detachable on friction; (3) when dried, minute almost crystal-like sparkling bodies, which on close examination proved to be minute cysts; (4) enlarged capillary tufts.

He had never seen such a tongue before, and on taking her round to the throat department he found that neither Sir StClair Thomson nor Mr. Hope had seen one either. He had seen a picture of lymphangioma of the tongue, but it was a much coarser lesion than this. Nevertheless that was the diagnosis he offered.

Dr. F. PARKES WEBER considered that this was a typical example of lymphangioma of the tongue, and he was astonished to hear it was so rare. He asked whether any recent physical methods of treatment were of any use in this condition, for instance, if the tongue greatly increased in size.

* *References*.—"On Multiple Rodent Ulcer: its Relationship with Multiple Benign Cystic Epithelioma," *Lancet*, 1908, ii, p. 1133; "On the Nature of Rodent Ulcer," *Lancet*, 1914, i, p. 810; "Epitheliomata Adenoides Cysticum of Brooke in Mother and Daughter and two Sons: its Relationship to Multiple Rodent Ulcer," *Proc. Roy. Soc. Med.*, 1914, vii (Sect. Derm.), p. 95; "A Case of Multiple Benign Basal-celled Epithelioma of the Scalp," *Brit. Journ. Derm. and Syph.*, 1918, xxx, p. 130.

The PRESIDENT (in reply) said he was sure that Dr. Parkes Weber was plainly wrong in thinking that the case was not very rare. He had shown it to men of great experience, and they had seen nothing like it. At the present meeting there were also men of vast experience present, and none of these, except Dr. Weber, were familiar with the appearance.

Dr. W. J. O'DONOVAN showed a case of *frambesiform syphilis*. The patient was a single labouring man, aged 28 years. He had never been abroad, save a period of service in France. Ten months ago he had had gonorrhœa; he denied having noticed a primary sore or any sore throat. For two months he had had an eruption on the scalp, which now appeared as several discrete round lesions, 1 to 3 cm. in diameter. These lesions were sharply defined, raised and red, with a very rough raised papillary surface. When first seen the surfaces were yellow with pus; hairs removed and heated in liq. potassæ showed no spores. There was bilateral enlargement of the posterior cervical glands, and one smooth shining macule 0.5 cm. in diameter in the right ante-cubital fossa. There were no throat lesions, no headache, no condylomata, no scar on the penis, and no enlargement of the inguinal glands. The Wassermann reaction was positive. While undergoing the usual course of intravenous treatment by novarsenobillon it was proposed to treat the lesions with local applications of malachite green.

Dr. J. J. PRINGLE said it was amazing to him how little was known in the profession generally about the "frambesoid" syphilide, of which the case shown was a typical example. The lesion was by no means a very rare one, and its appearance was absolutely characteristic, *sui generis*, but the number of mistakes he had seen in connection with it was large. The condition was generally mistaken for impetigo, and in three cases occurring in soldiers poulticing had been assiduously carried out for three months before they came under his care, while another, in private practice, had been treated with injections of collosol manganese for more than two months. It was unusual to find the condition confined to the scalp, as in the case shown, the lesions on other parts of the body being frequently of the "conglomerate suppurative follicular type" before they became characteristically frambesoid. A point of interest was that the condition was almost always a comparatively early secondary manifestation, and another feature was the surprisingly small amount of scarring left after recovery, which was usually extremely rapid under treatment. In several cases he had seen in which the scalp was involved to the same extent as in the case shown no appreciable baldness was left, although the lesions when first seen had the clinical appearances of being deeply destructive.

Mr. McDONAGH said that during the last fortnight he had seen four such cases in which a mistaken diagnosis had been made by even good derma-

tologists. The lesion was an early one, and hardly ever appeared later than the eighth month after the infection. In his last case the frambesiform syphilide appeared before the primary sore was healed. The lesion was really a papule, in which an enormous hypertrophy of epithelium had taken place, this accounting for the absence of scar left on healing. As a rule the lesions disappeared very rapidly under treatment, although occasionally they proved most obstinate. In the latter cases intramine would as a rule be efficacious. In two cases recently seen the lesions appeared, for the first time, immediately after a full course of injections of arsenobenzene (full doses). Should intramine not effect their disappearance, it was best to give intravenous injections of different brands of arsenobenzene every other day in doses not exceeding 0.1 gm. In his experience this had proved the best treatment in all cases of malignant syphilis and cases approaching thereto.

Dr. PERNET said that he had written a short paper on the subject some three years ago.* This was based on three cases observed at the West London Hospital. The patients were white European women, who had never been out of the country. The frambesiform lesions were few and far between on the glabrous skin, but in all three cases the scalp was mainly affected.

The PRESIDENT said that he did not think these cases were very common, but they were much commoner in patients who had come from the tropics, and had possibly caught the disease there. In the last 1200 cases in the Syphilis Clinic at King's College Hospital they had had only one mild case.

Dr. MACCORMAC said that when he was in charge of the Skin-Clinic at the Seamen's Hospital, Greenwich, he saw a number of these cases, and he was interested in Mr. McDonagh's remarks about the resistance to certain forms of treatment. His impression was that failure generally resulted from giving too small doses of salvarsan: the spirochaetes became habituated to it, and so it was not lethal to them.

Dr. H. W. BARBER showed a case of *severe tertiary syphilis*. The patient was aged 33 years, and unmarried. Syphilitic infection was absolutely denied, but a penile scar was present. He stated that the skin-lesions began about two and a half years ago, the first one being a kind of "boil" on the face, which broke down, forming an ulcer. Other lesions appeared later on the neck, chest, back and limbs.

He was sent to him as an extensive case of tuberculosis of the skin. He was then unable to walk. There were large fungating lesions on the face, numerous broken-down gummata on the back and limbs, and an enormous infiltrated mass on the chest. The lesions discharged pus freely, and were very foul. There was considerable pyrexia, and the patient was seriously ill. He was given 0.45 gm.

* Pernet, "The Early Frambæsiform Syphilide," *Med. Press and Circ.*, 1917, ii. p. 292.

of novarsenobillon immediately, and put on a mercury-iodide mixture. The temperature rapidly fell to normal, and there was immediate improvement in his general condition. He had since had five more injections of novarsenobillon; many of the lesions had completely healed, and he could now get about fairly comfortably.

His appearance suggested that he was a tubercular subject, though no investigations for active tuberculosis had yet been made.

He would like opinions on the observation made by the late Sir Jonathan Hutchinson that syphilis in tubercular subjects was usually much more severe than in non-tubercular people.

Dr. S. E. DORE said he remembered several cases in Dr. Pringle's clinic many years ago in which patients who had tuberculosis and syphilis did badly. Since salvarsan had been introduced he thought the prognosis in these cases had been much better. In one case of a nurse with a digital chancre and advanced pulmonary tuberculosis the syphilis did well under salvarsan, which she took in the ordinary doses without ill-effect, the fever abated, the patient gained flesh, and the physical signs also showed improvement.

The PRESIDENT said that the older members who had also been members of the late Dermatological Society of London would no doubt remember that several cases had been shown of patients with old-established lupus who had acquired syphilis, and that these diseases in these instances did not modify one another noticeably. Tuberculosis was a disease which brought about a cachexia, and if the patient were cachectic his syphilis ran a severe course. He thought there was nothing specific about the effect of tuberculosis on syphilis, but that it was simply the result of debility such as was seen in underfeeding and excessive alcohol consumption.

Dr. GRAHAM LITTLE referred to a case of combined syphilis and tubercle which he showed seven years ago in a child, who had extensive lupus of the arm. It had gummatous lesions coming out frequently, some of which did not heal. He was sure many of the cases of ulceration were tuberculous ulcerations on a syphilitic basis; the transformation could be watched.

Dr. PERNET said that cases of syphilis complicated by pulmonary tuberculosis did badly in the old days when mercury was much pushed. It seemed to give the syphilis a chance of being more destructive. Mercury had to be used with great care in such cases, just as arsenobenzol must be used with great care in cases in which there was hæmoptysis.

Dr. H. W. BARBER showed a case of *Xanthoma multiplex*. The patient was a boy, aged 4 years. He was healthy at birth. There were three other healthy children. The xanthoma lesions appeared nine months ago and were first noticed on the hands. At present there were numerous typical xanthoma patches, chiefly situated on the backs of the hands, over the joints, at the back of the elbow-

joints, in the joint flexures at the back of the knees, on the buttocks and around the ankles.

The patient was now under Dr. Cameron's care at Gny's Hospital. The urine contains no sugar or albumen, but Dr. Ryffel had found a very considerable excess of cholesterol in the blood-plasma. The blood-sugar had not yet been estimated. There was no evidence of disease of the liver, and the child appeared perfectly well.

Dr. F. PARKES WEBER said the case reminded him of certain rare cases in adults associated with liver disease and obstructive jaundice of long duration. In regard to some adult cases it had been suggested that xanthomatous nodules might have been present in the biliary passages, and by their presence there have given rise to chronic obstructive jaundice with enlargement of the liver.

Dr. H. W. BARBER showed a case of *almost complete Alopecia areata of the scalp of five years' duration, in which re-growth of the hair followed removal of tonsils and adenoids, and subsequent vaccine treatment.*—E. G—, boy, aged 12 years. Bald patches began to appear on the scalp at the age of seven; within a few months practically the whole scalp was bald except for a fringe around the lower margin. At times growth of lanugo hair would appear and then this would fall again. He came under his care early in 1920. At that time there was almost complete alopecia except for a fringe of downy hair around the lower margin. There was chronic rhinitis, the tonsils were enormously hypertrophied, almost meeting in the middle line, and the posterior nares were blocked by a mass of adenoids, from which there was a constant muco-purulent discharge.

The boy was admitted to hospital, and the tonsils were enucleated and the adenoids removed by Mr. Zamora on February 24th, 1920. Cultures from the enucleated tonsils gave principally a growth of *Streptococcus pyogenes longus*, from which vaccine was prepared and administered for about five months. By April 13th the hair was growing freely, and he now had complete re-growth of normal hair except on a patch on the occipital region, where lanugo hair could be seen appearing.

Dr. DORE said that with regard to the association of alopecia with tonsillitis he had made inquiries since Dr. Barber called attention to the matter, and he had seen three cases in which the tonsils had been removed and the alopecia had come on after removal.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.,

EVOLUTION OF A DERMATOSIS WHICH BEGAN AS PSORIASIS VULGARIS. WENT THROUGH AN ECZEMATOUS STAGE, RECURRED AS PSORIASIS RUPIOIDES, AND FINALLY DEVELOPED INTO PEMPHIGUS FOLIACEUS. G. VERROTTI. (*Giorn. Ital. d. Mal. Ven. e. della Pelle*, 1920, fasc. iii, p. 431.)

THE patient was a man, aged 23 years. He suffered from an extensive Psoriasis vulgaris in 1909. This was cured in the same year. In 1914 the psoriasis recurred in the previous situations and elsewhere and was complicated with eczema. These eruptions also disappeared. In the following year he developed Psoriasis rupioides accompanied by blister-formation. The blisters were filled with serum and sero-pus. The general condition deteriorated. He had enlargement of all lymph-glands, rheumatic pains and headaches. Soon the whole skin became red and a typical Pemphigus foliaceus developed, and he gradually became weaker and died in 1915. The author thinks there is some connection between the Psoriasis rupioides and the Pemphigus foliaceus and that the latter probably was an infection on the top of the former. Post-mortem the most striking change found was a complete destruction of the basophile granular cells and an excess of acidophile cells in the anterior lobe of the pituitary gland.

R. C. L.

A CASE OF GENERALISED PSORIASIS VULGARIS WITH AMENORRHOEA CURED BY OVARIAN EXTRACT. G. VERROTTI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 447.)

THE patient, a woman, aged 29 years, had suffered from an extensive Psoriasis vulgaris for five years. Amenorrhœa also occurred about the same time as the psoriasis appeared. All the ordinary forms of local treatment were used, with temporary benefit, but the psoriasis recurred. Then ovarian extract was administered daily, and in a very short time the psoriasis disappeared and menstruation commenced. Eighteen months later the psoriasis remained cured. The author considers psoriasis as a toxicodermia depending on altered function of one or other of the internal organs.

R. C. L.

ON CASES OF ACTINO-DERMATITIS IN SOLDIERS OF THIRD ARMY. A. MIBELLI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 458.)

NUMEROUS cases of a vesicular and crusted dermatitis occurred in 1918 in soldiers of the Third Italian Army. It affected the exposed parts, especially the face, neck and back of ears. It began as an erythema, became vesicular and crusted and desquamated, leaving a pigmented surface. The dermatitis was traced to the use of a particular electric arc-light with a special reflector known as the "Sperry apparatus." This light produces a large number of ultra-violet rays, and had to be abandoned as a luminant because of its effect on the soldiers' skins.

R. C. L.

SO-CALLED DERMATITIS DYSMENORRHEICA. F. WISE and H. J. PARKHURST. (*Arch. of Derm. and Syph.*, 1920, ii, p. 725.)

THE patient here described presented a syndrome in which dysmenorrhœa each menstrual period was accompanied by a regularly recurrent, more or less characteristic eruption manifested by œdema, erythema, follicular hæmorrhage, crusting and pigmentation. Between the periods the eruption vanished, and during pregnancy it remained in abeyance.

J. M. H. M.

HERPES MENSTRUALIS. P. G. RINSEMA. (*Acta Dermato-Venereologica*, i, fasc. i, p. 87.)

A MARRIED woman, aged 31 years, had noticed shortly before each menstrual period since the age of fourteen—i. e. one year after menstruation had commenced—an outbreak of grouped vesicles on the right thigh, mostly over the area of distribution of the obturator nerve, accompanied by an itching and burning sensation. On the left side were fewer lesions close to the vulva. She had been three times pregnant. On the first occasion she had remained free from herpes, but during the two subsequent pregnancies the eruption appeared a few days before the menstrual period was due and persisted until delivery. The suggestion is put forward that the herpetic eruption was produced through the action of a substance formed in the corpus luteum of the nature of an internal secretion.

W. J. O.

VARIOLIFORM ATROPHIC FOLLICULITIS. L. SAVATARD. (*Arch. of Derm. and Syph.*, 1920, ii, p. 743.)

A CASE is here described of a young man, aged 17 years, who presented pitted atrophic scars on both cheeks, which varied in size from a pin's head to a split-pea. There was also slight capillary dilatation, and a few comedones could be detected. He had not suffered from smallpox nor from any pustular eruption of the face.

A case of the same type was described by Heidingsfeld in May, 1918, under the title "Atrophia maculoso varioliformis cutis."

J. M. H. M.

SCLERODERMIA AND RADIOTHERAPY. E. VIGANO. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 451.)

THE author reports two cases of extensive sclerodermia which were cured by applications of X-rays. A 1 mm. aluminium filter was used. Each area was exposed on alternate days for three days, giving in all 5-6 H. Then, after an interval of from ten to twenty days, the doses were repeated. The hardening of the skin gradually disappeared in both cases.

R. C. L.

NEW GROWTHS.

DIGESTION OF KELOIDS, CICATRICES AND BUBOES WITH PEPSIN-HYDROCHLORIC ACID. E. AHLWEDE. (*Arch. of Derm. and Syph.*, 1921, No. 2, iii, p. 142.)

THIS communication refers to a number of experiments in which attempts were made to reduce keloidal scars, etc., by digesting the tissue with pepsin and hydrochloric acid. The solution employed was pepsin 10 c.c., muriatic acid 1 c.c.,

phenol 1 c.c., and distilled water to 200 c.c. The results were most satisfactory, and in scarring after burns an excellent cosmetic effect was obtained.

J. M. H. M.

- (a) VON RECKLINGHAUSEN'S DISEASE IN THE NEGRO;
 (b) CURVATURE OF THE SPINE IN VON RECKLINGHAUSEN'S DISEASE. R. S. WEISS. (*Arch. of Derm. and Syph.*, 1921, No. 2, iii, p. 144.)

IN this contribution the writer records a case of Fibroma mollusum in a negress, which would appear to be a very rare condition in the negro race. He also reports a case in which the disease was associated with curvature of the spine.

J. M. H. M.

FIBROMYXOMA, PROBABLY A LINEAR NÆVUS. F. J. EICHENLAUB. (*Arch. of Derm. and Syph.*, 1921, No. 2, iii, p. 152.)

IN the case here reported there occurred a peculiar condition on the under-surface of the arm of a woman in the form of a pendulous lobulated mass extending from the axilla to the palm of the hand and of a doughy consistence. The skin over the tumour was more deeply pigmented than the normal skin. Above the tumour and in a line with it was a typical pigmented nævus. A biopsy showed the lesion to be a fibromyxoma with no fat tissue, and as it had been present at birth and had remained unchanged ever since it was regarded as a variety of linear nævus.

J. M. H. M.

SYPHILIS.

THE EFFECT OF ANTI-TYPHOID AND ANTI-CHOLERA INJECTIONS ON SYPHILITIC INDIVIDUALS. M. ERSETTIG. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. ii, p. 187.)

FOURTEEN syphilitics, in all of whom before treatment the Wassermann reaction was positive, were given each three injections of a typhoid vaccine, the first containing 500 million typhoid and 250 million paratyphoid bacilli, the second double and the third treble that number. Each injection was given at one week's interval. Then two injections of cholera vaccine, the first containing 2000 million organisms and the second 4000 million. The authors found that these vaccines are capable of modifying the Wassermann reaction. Such modification is almost always constant, and resulted in a strongly positive reaction being changed into a negative. The injections also caused a gradual modification of the syphilitic lesions, ending with their complete disappearance even although no anti-syphilitic treatment was administered.

R. C. L.

DISSEMINATION OF SPIROCHÆTA PALLIDA IN EXPERIMENTAL SYPHILIS. F. EBERSON. (*Arch. of Derm. and Syph.*, 1921, No. 2, iii, p. 111.)

THE following is a summary of a series of experiments carried out in rabbits with regard to the dissemination of the spirochæte in syphilis: "*Spirochæta pallida* have been isolated from the blood-stream of experimentally infected rabbits seven, ten and thirty days after intratesticular inoculation, at times

corresponding to twenty-six, twenty-three and three days prior to the appearance of any initial lesion.

"The regional lymph-glands of rabbits have been found to contain active virulent *Spirochæta pallida* seven days after inoculation of the rabbit's testicle and twenty-six days before any primary lesion had appeared.

"The spleen has been shown to contain *Spirochæta pallida* more than two months after the inoculated testicle had healed entirely, and has been found free from spirochætes by repeated puncture and direct inoculation of the excised testicle into other rabbits. For confirmation of experimental work and for the diagnosis of suspicious syphilitic material which cannot be studied microscopically, it appears that the method suggested by these studies might be employed to advantage.

"With early invasion of the lymph-glands and blood-stream established definitely during the incubation period of syphilis in animals, the theory of a life-cycle of *Spirochæta pallida* is weakened considerably. The absence of organisms, as judged solely by microscopic findings, is not convincing proof that a change of form has taken place within the animal body. That *Spirochæta pallida* is found unaltered both in morphology and in virulence in the blood and glands seems sufficient to render the theory untenable."

J. M. H. M.

VISCERAL SYPHILIS. U. J. WILE. (*Arch. of Derm. and Syph.*, 1921, No. 2, iii, p. 117.)

Syphilis of the spleen.—According to the writer it is probable that syphilis occurs more frequently in the spleen than is indicated in the literature. It occurs early in the form of acute splenic tumour, and late as interstitial splenitis, gummata and amyloid disease. In addition the spleen is frequently enlarged as a result of interstitial splenitis and peri-splenitis in association with visceral syphilis elsewhere.

Syphilis of the pancreas.—The pancreas, according to the writer, is a common site of election for syphilis of the newborn, but clinical syphilis of the pancreas in the acquired form is exceedingly rare. It has been found occasionally in association with syphilitic hepatitis and other forms of visceral syphilis. In a certain number of cases undoubted syphilis of the pancreas has been diagnosed during life. The condition occurs as a gummatous or nodular pancreatitis, as an interstitial pancreatitis, or as a combination of both. It is associated with pain, jaundice, glycosuria and tumour of the pancreas without cachexia, but none of these is sufficiently constant to be pathognomonic.

J. M. H. M.

THE NEW SWEDISH LAW CONCERNING VENEREAL DISEASES.

KARL MARCUS. (*Acta Dermato-Venereologica*, i, fasc. i, p. 62.)

The fundamental principles of this law, which came into force on January 1st, 1919, are:

- (1) A wide service of information and instruction.
 - (2) The obligation of every venereal patient to consult a medical man and to follow the treatment ordered.
 - (3) The right of every patient with venereal disease to free treatment.
 - (4) The application of certain coercive measures, both sanitary and penal.
- The thirty-one articles of this law are analysed in greater or less detail.

W. J. O.

REVIEWS.

A HANDBOOK OF SKIN-DISEASES AND THEIR TREATMENT.*

As the title suggests, Dr. Whitfield's handbook makes a particular feature of the therapeutics of skin-diseases. In the first chapter of this new edition there is a summary of the principles of general and local treatment, which contains many shrewd observations and useful practical hints, such as the comment upon the commonly accepted opinion that water should not touch an eczematous skin, whereas "even the most irritable discharging eczema may be bathed freely, provided the bathing solution is isotonic and perhaps slightly hypertonic."

Significant of the importance attached to external treatment is the fact that less than half a page is given to internal remedies, and that "only three drugs need be considered, namely, arsenic, mercury and thyroid extract."

Throughout the book the author is not content to give merely a statement of things that may be done, but says very definitely what he has found to be the best treatment; what he says as to the treatment of *Pediculosis capitis* is characteristic of his whole method of dealing with therapeutics. "Given an infection, what is the quickest way to destroy it? Many methods have been recommended and employed, but as one is absolutely satisfactory, I now never use any other," and he then proceeds to describe in detail the method he has found most efficacious. Good examples of his masterly and decided way of dealing with the subject of treatment are the paragraphs relating to the therapeutics of *Lupus vulgaris*, of eczema and of syphilis. He is of opinion that the treatment of lupus by scraping has undeservedly fallen into disrepute because it has been badly done, and says that scraping should be followed by cauterisation, preferably with chloride of zinc. Among many useful suggestions we note that as to the value of opium in pemphigus, the use of which was strongly advocated by Liveing.

The author's earlier prejudice towards X-ray treatment has become modified, and he now recommends X-ray treatment for many complaints for which he formerly seemed to hesitate to do so. This changed attitude is due, no doubt, to the much improved means of measurement of dosage which are now at our disposal. In the treatment of that obstinate affection, *Sycosis menti*, he goes so far as to recommend the repetition of a depilatory dose every three weeks until permanent destruction of the hair-follicles results, although this is followed by atrophy and telangiectases. It must not be inferred that the dangers of the indiscriminate use of X-ray treatment are not strongly emphasised, and while he writes of the value of X-ray treatment in certain cases of acne, of eczema and of psoriasis, he cautions as to the care required to avoid ageing of the skin and other troubles by over-dosing.

The opinion that in the treatment of rodent ulcer by X-rays, fractional small doses are incomparably superior to massive dosage, seems at first view entirely opposed to the experiences of others. But this is perhaps a misunderstanding.

* *A Handbook of Skin-Diseases and their Treatment.* By ARTHUR WHITEFIELD, M.D.Lond., F.R.C.P. Second revised edition. Pp. 291. With illustrations. Edward Arnold, 1921. Price 18s. net.

for his method of small doses repeated daily over a limited period is practically that of a massive dose. The really dangerous method, because it leads eventually to stimulation of the growth, is the repeated application of ineffectual doses at intervals which are too long to allow of a cumulative effect.

Attention is called to other considerable advances in dermatology and syphilology besides that of X-ray treatment. All that is new in the pathology and treatment of syphilis is clearly and carefully dealt with. But the theory of focal infection, of which it is said in the preface that its future is likely to be of great importance, is mentioned only in the briefest manner in the text under flexural eczema, Lupus erythematosus and Lichen planus, and is not even given a place in the index.

Although emphasis has been laid upon the satisfactory manner of dealing with the subject of treatment, it need hardly be said that the descriptions of diseases are original and lucid, that views as to aetiology and pathology are clearly expressed, and that diagnosis is discussed in a thoroughly practical manner.

The book reflects on every page the personal observations and experiences of the author, and one of its most attractive features is the note of enthusiasm for his subject which the author maintains and so successfully conveys to the reader.

H. G. A.

TROPICAL DISEASES.*

MANSON'S *Tropical Diseases* has reached its seventh edition; it has been edited, revised and enlarged by Dr. Manson-Bahr. This book is so well known that it requires no description here; it is one of the most important of all the medical text-books, and for years has been "the guide, philosopher and friend" of the pioneers of medicine in the outposts of the Empire. At its inception it was designed as a small handbook, not to compete with or replace the larger exhaustive works of Laveran, Roux and others, but to furnish an up-to-date and sufficient description of tropical diseases, and yet to be so compact as not to be a burden to the traveller. The present revision has necessitated some enlargement, but by the free use of small type the volume has not become unduly bulky.

A number of new illustrations has been added, some of which are coloured drawings of pathological specimens by the editor, and others are drawings by Terzi. A valuable addition to the book is an appendix on medical zoology and laboratory methods, which is clearly written, concise, and will be of great value to the student.

Naturally in a work on tropical medicine there is much that is of interest to the dermatologist. In connection with trypanosomiasis, for example, there is an excellent photograph of the characteristic patchy or annular erythema which occurs on the chest and back chiefly in the earlier stages of the infection. In the treatment of oriental sore tartar emetic is strongly advocated, both by intravenous injection and by the local application of a 2 per cent. ointment in

* *Manson's Tropical Diseases*. Seventh edition, revised and enlarged. Edited by PHILIP H. MANSON-BAHR. Pp. 960. With 21 colour plates, 6 half-tone plates, 404 figures in the text and 31 charts. London: Cassell & Co., Ltd., 1921. Price 31s. 6d. net.

lanolin. In discussing the aetiology of pellagra the food deficiency theory seems to be favoured, especially the idea that it may be connected with a deficiency in biological proteins; this theory, as the editor points out, is by no means proved, as pellagra is known to occur in people provided with an ample protein dietary. The section on leprosy is up-to-date, but the coloured illustration of the early macular rash might be improved as it is not sufficiently characteristic and from it alone it would be difficult to make a correct diagnosis. Yaws and Verruga peruviana receive a full description. In connection with the histopathology of the latter, it is not quite accurate to state that the pathological changes are similar to those found in yaws; they are both granulomatous tumours, but in yaws there is a dense plasma-cell infiltration, so dense that the tumour merits the name of a plasmoma, while in verruga the plasma-cells are fewer in number and the structure is more that of a cavernous tissue. It would save confusion were the name "dhobi itch" finally restricted to ringworm of the crutch, axilla, etc., and be an advantage were Pemphigus contagiosus of the tropics removed from this group, as it is probably a streptococcic infection.

On the whole the new edition is admirable, and the editor is to be congratulated on the care and thoroughness with which he has carried out his task, while the plates, printing, and the durable binding do the greatest credit to the house of Cassell.

J. M. H. M.

DERMATOLOGISCHE VORTRÄGE FÜR PRAKTIKER.*

IN this short manual of cosmetics the author has sought to expound the mysteries of an important and much-neglected branch of dermatology to the general practitioner.

There is very little in it that cannot be gleaned in more detail and with greater authority from any recognised text-book on skin-diseases, and to a trained reader the general impression is one of a haphazard selection of sections and chapters dealing with the minor cutaneous ailments of the face, probably culled from one of this prolific writer's larger works.

Though unsystematically arranged, the individual treatment of the various subjects discussed is clear and scientific, and entirely free from any suspicion of the quackery that sullies the art of the beauty specialist in all countries, and the writer is obviously a dermatologist of wide experience and training.

Considerable space is devoted to a description—sometimes rather prolix—of naked-eye appearances and aetiology, but in no instance is there any attempt to touch upon the morbid histology, which, from the busy practitioner's point of view, could hardly meet with appreciation.

The formulæ of the applications advised are all simple and not too numerous, but it seems a pity that the author should so frequently have prescribed a proprietary preparation—*Mitin*—as the ideal base for almost all the ointments he tabulates.

The other therapeutic measures recommended are all in general use by dermatologists in France, England and America.

* *Dermatologische Vorträge für Praktiker.* Heft 17: *Schönheitsfehler und ihre Behandlung.* By Dr. S. JESSNER. Fourth Edition. Leipzig: Curt Kabitzsch, 1921. Price M. 13.

Special illustrated sections are devoted to electrolysis, treatment by the carbon dioxide pencil, the electric and galvano-cauterics, and to the indications for facial massage. But in his recommendation of these the author does not forget to stress the importance of attention to general and dietetic measures, which in most text-books on the subject of cosmetics are usually conspicuous by their absence.

Radiotherapy in all its branches is only lightly touched upon, and the practitioner is frequently advised to leave its actual application to the expert.

The ground covered is extensive and includes all the commoner diseases and stigmata to which the face, hair, scalp and nails are liable. The book as a whole is interesting and readable, and fulfils very well the minor but useful rôle which its author designed for it.

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Skin Diseases in General Practice: Their Recognition and Treatment. By HALDIN DAVIS, M.B., B.Ch., B.A.Oxon., F.R.C.S.Eng., M.R.C.P. 2nd Edition. Pp. 345. 15 illustrations in colour and 73 in black and white. London: H. Frowde and Messrs. Hodder & Stoughton. £1 5s. net.

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MULTIPLE CARCINOMA OF THE SKIN: "PRE-CANCEROUS DERMATOSIS OF BOWEN."

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WITH PATHOLOGICAL REPORT BY

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(Continued from p. 181.)

PATHOLOGICAL REPORT FROM PROF. TURNBULL.

Specimen I: S.D. 825; May 28th, 1920.

Clinical note.—A wedge of tissue removed from the edge of a plaque, which measured $2\frac{1}{2}$ in. in diameter, was situated in the centre of the back, and was covered with "papillomatous vegetations."

Macroscopic examination.—A portion of skin (1.8×0.8 and 0.4 cm. deep), in formaldehyde solution. One angle of the surface is occupied by thin, wrinkled, white epidermis; a smaller area is occupied by thickened, yellowish, homogeneous epidermis; the remainder is occupied by a soft, red ulcer.

Microscopic examination.—A portion of skin containing sweat-glands and arrectores pilorum (Fig. 1). The skin in about one half of the section appears to be normal. The interpapillary processes of

the epidermis are short. There is no infiltration of the dermis. The dermal elastic fibres are normal. The majority of the basal cells of the epidermis is pigmented. In the dermis are a very few cells containing similar pigment.

In one section there is a small abnormal area in this strip of normal skin. A vertical vessel within a papilla is surrounded by lymphocytic infiltration. The Malpighian layer of the epidermis immediately above this is infiltrated with lymphocytes, whilst the epithelial cells are shrunken and are widely separated by clear, oedematous, spaces.

Further towards the left, in the other half of the section, there is a rapid alteration in the epidermis and dermis. The interpapillary processes of the epidermis lengthen and broaden. At the same time the dermal papillæ lengthen, so that the surface of the Malpighian layer is raised to form filiform, papillary projections over the dermal papillæ and sinks into long narrow bays between the dermal papillæ. The horny layer is greatly thickened so as to fill these bays and form a very thick layer all over the altered epidermis. Sweat-ducts are visible in the centres of some of the elongated epidermal processes. These alterations in the epidermis are associated with an increasing zone of infiltration of the subjacent dermis. The cells of this infiltration are chiefly lymphocytes and plasma-cells; there are also several eosinophil leucocytes, neutrophil leucocytes and tissue mast-cells, and a few large cells loaded with coarse granules of brown-yellow pigment. The infiltrating cells are packed closely together. The collagenous fibres are reduced thereby to a few slender fibrils and the elastic fibres are completely destroyed. A moderate number of leucocytes, almost all eosinophil, has emigrated into the epidermal processes.

The epidermal processes are sharply defined, so that there is no evidence of malignant infiltration. The epithelial cells therein are, however, less typical in shape and arrangement than in an ordinary papilloma. Prickle borders are almost universally absent, and there is no regular arrangement of the basal layer of cells. Karyokinetic figures are astonishingly numerous. A few epithelial cells contain granules of brown-yellow pigment.

The pigment in the epithelium and in the cells of the dermal infiltration does not give the Prussian-blue reaction for iron, is stained

emerald green by polychrome methylene-blue differentiated with tannic acid, and is not stained by carbol-fuchsin. It appears, therefore, to be melanin.

In several sections there is perinuclear vacuolation, or even separation by inter-cellular vacuolation, of some of the Malpighian cells in the first interpapillary processes to lengthen; these changes usually affect cells near the apices of the processes.

The lesion is a filiform, papillary, horny, epidermal growth, in which the number of karyokineses proves great rapidity of prolifera-

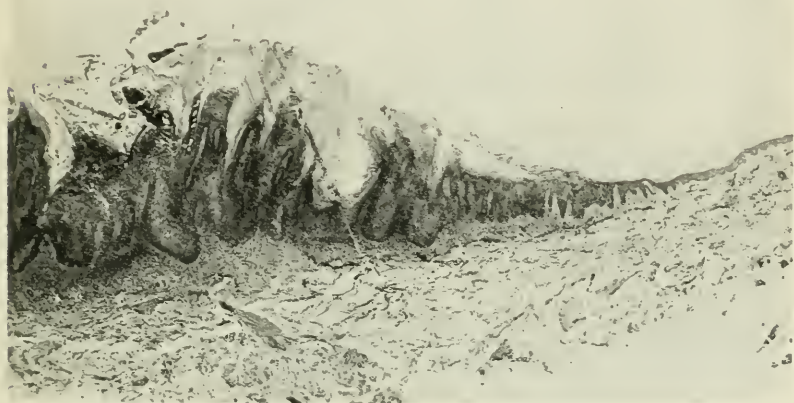


FIG. 1.—Specimen I: Hæmatoxylin and eosin, $\times 17$. To show transition from normal skin to papilloma.

tion. The growth is not acting in a malignant manner—that is to say, it is not infiltrating the tissues like a cancer. But in the atypical structure of the proliferating epithelium the growth resembles those which do behave in a malignant manner. *The growth is a rapidly growing, filiform, horny papilloma exhibiting histological features which make a malignant behaviour probable.* It has arisen in extensively pigmented skin and is slightly pigmented, the greater part of the pigment lying in cells of the interstitial tissue.

Specimen II: S.D. 873; June 5th, 1920.

Clinical note.—Tumour excised from skin of arm, and glands from axilla.

Macroscopic examination.—(1) A portion of skin measuring 6.5×4.5 cm. In the centre is a raised area (4×3.5 cm). The edges of this area are in places shelving; in places they are raised to a height of 0.5 cm. and are everted. The surface is pink, granular and eroded. On the cut surface the raised area corresponds to a layer of firm white tissue, 0.9 cm. at its deepest, bounded inferiorly by lipomatous tissue.

(2) A portion of lipomatous tissue containing a few lymphatic



FIG. 2.—Specimen II: Hæmatoxylin and eosin, $\times 17$. One border of carcinomatous nodule, showing lateral extension of carcinoma in dermis.

glands, of which the largest measures 2×1.2 cm. The cut surfaces of the glands are soft and red.

Microscopic examination.—(1) A portion of skin. To one side there is a strip of epidermis of normal appearance. It contains very little pigment. The sweat-glands in the dermis lie in an interstitial tissue which is abnormally abundant and is mucoid.

This skin changes abruptly into a small area in which there is an overgrowth of epidermis and a conspicuous dermal infiltration. These are similar to those described in the previous section, except

in that karyokineses in the epidermis are rare, and perinuclear and pericellular vacuolations are absent. This small portion of abnormal epidermis lies immediately to the side of a large elevation with overhanging margin (Fig. 2). The surface of the elevation is ulcerated. At the other extremity of the section the elevation ends and is followed by a strip of epidermis, which again shows abnormalities very similar to those in Specimen I.

The elevation is composed of a net of broad and narrow epithelial trabeculae in a relatively scanty fibrous stroma; the epithelial trabeculae extend down to the subcutaneous tissue, and extend laterally throughout the dermis beneath the small portion of abnormal epidermis at the margin of the elevation. The cells of the epithelial trabeculae differ from cells of the Malpighian layer of the epidermis only in absence of prickle borders and in lack of uniformity in size and disposition. Within a very few of the trabeculae are small "pearls" composed of horny cells.

In the fibrous tissue within the meshes of the epithelial net the elastic fibres are almost completely destroyed. Cellular infiltration is scanty except in the deeper part of the mass; here there is considerable infiltration with lymphocytes, plasma-cells and occasional eosinophil leucocytes and tissue mast-cells.

No pigment was detected in the epithelial trabeculae or interstitial tissue.

In this portion of skin there is a *squamous and horny carcinoma*, of which the malignancy is proved by an invasion of the dermis downwards to the subcutaneous tissue and laterally beneath the adjacent epidermis (Fig. 2). At each extremity of this carcinoma the epidermis shows changes similar to those in Specimen I. The growth is not pigmented; the adjacent skin contains very little melanin.

(2) Five lymphatic glands. Slight, subacute inflammation is shown in these by proliferation and desquamation of the endothelial cells of the sinuses and by adventitial infiltration with plasma-cells; chronic inflammation is shown in one gland by scattered areas of hyaline fibrosis. There is no infiltration by malignant growth.

Specimen III: S.D. 1644; October 28th, 1920.

Clinical note.—A "bntton" from the skin of the thigh.

Macroscopic examination.—A portion of skin 4 cm. in diameter and

3 cm. at thickest. From the centre of the epidermal surface there projects a nodule 0·5 cm. high and 2 cm. in diameter. In the centre this is slightly ulcerated and is covered by a yellow scab; round the scab it is covered by smooth, pink skin. The skin round the nodule is smooth and slightly wrinkled. On section the nodule is seen to be composed of white, slightly granular, rounded masses (the largest 0·8 cm. in diameter), separated by sunken grey lines. The nodule is bounded inferiorly by white dermis and lipomatous tissue.

Microscopic examination.—A portion of skin containing sweat-glands. In the centre is a large oval projection with overhanging margins. The epidermis sweeps up and over the surface of this nodule (Fig. 3).

On either side of the nodule the epidermis is deeply pigmented. It, and the dermis beneath, show no abnormality.

The nodule consists of several rounded tumours separated by fibrous trabeculae. The tumours consist of solid or reticular masses of epithelium; the reticular arrangement predominates. The great majority of the epithelial cells is small; a single layer in the periphery is usually cubical or short columnar; the remainder are oval or oat-shaped; prickles borders are absent. The cells contain a nucleus of about the same size as that of the epidermal cells, but have much less cytoplasm. Consequently the epithelial groups in the tumour appear dark blue in hæmatoxylin and eosin sections in contrast to the paler, pinker epidermis. In a few spots the epithelial cells are larger and resemble cells of the Malpighian layer of the epidermis, but are devoid of prickles borders. There are two narrow trabeculae composed of these larger cells surrounding a core of horny cells.

The interstitial tissue filling the meshes of the epithelial reticulum frequently shows œdematous degeneration or necrosis.

The fibrous trabeculae between the rounded epithelial tumours is infiltrated with numerous lymphocytes, plasma-cells and tissue mast-cells, and a few eosinophil leucocytes.

In the interstitial tissue, both between the rounded epithelial tumours and in the meshes of such tumours as are reticular, are several groups of large cells loaded with coarse granules of brown-yellow pigment. A few fine granules of similar pigment are present within occasional epithelial cells. The pigment is not removed by

concentrated nitric acid (sp. gr. 1.42), and does not give the Prussian-blue reaction. It behaves like the melanin in the epidermis.

The nodule is covered by epidermis. At only a few spots is the epidermis continuous with the epithelium of the tumour. When this occurs the transition from the Malpighian cells of the epidermis into the epithelial cells of the tumour is rapid. Save at these points of rapid transition the epidermis only differs from that on either side of the nodule in that it is about twice as thick, is in places devoid of



FIG. 3.—Specimen III: Hæmatoxylin and eosin, $\times 17$. One border of nodule occupied by basal-celled carcinoma.

interpapillary projections, and occasionally has nuclei in its stratum corneum; the prickles borders are distinct. The lower limit of the tumour corresponds approximately to the level of the epidermis on either side. Beneath it lies dermis containing sweat-glands.

In this tumour the size and shape of the epithelial cells, their arrangement in nodules, for the most part of reticular structure, the relation of these nodules to the epidermis and the degeneration of the fibrous stroma within the meshes of the epithelial reticulum are features characteristic of "*basal-celled carcinoma*" of the skin. The presence of a few small areas resembling ordinary, squamous and

horny carcinoma does not exclude the diagnosis of "basal-celled carcinoma"; such small areas may occur in the typical basal-celled carcinomata of rodent ulcers. The adjacent skin is richly pigmented, and the tumour contains many cells loaded with melanin, such cells lying chiefly in the interstitial tissue.

Specimen IV: S.D. 1734; November 15th, 1920.

Clinical note.—Skin from back.

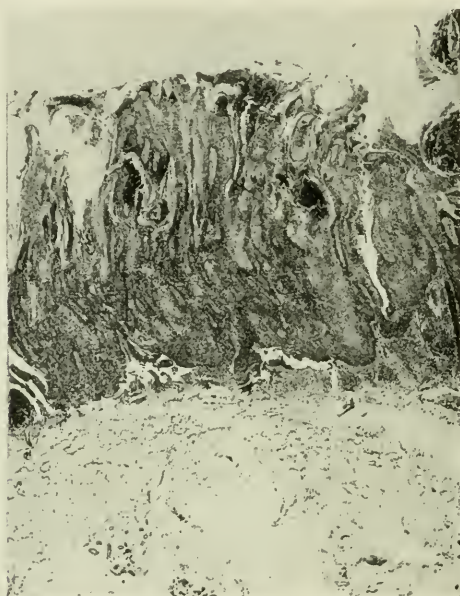


FIG. 4.—Specimen IV: Hæmatoxylin and eosin, $\times 17$. Portion of papilloma.

Macroscopic examination.—Portions of skin. The largest measures 1.5 cm. in diameter. At one end of this is a small area of smooth skin. The remainder of the surface is occupied by a raised, granular mass. On section the mass is seen to consist of grey, granular, vertical streaks and dots bounded inferiorly by a narrow zone of white fibrous tissue.

The smaller portions of tissue have a similar structure. The largest was embedded in paraffin for section.

Microscopic examination.—The sections include no normal epidermis. The epidermis (Fig. 4) is raised by narrow dermal papillæ into

filiform papillæ which are covered by a mass of horn; between these it sends downwards very long processes, which frequently anastomose to form a closely-meshed net of narrow epithelial trabeculæ. These processes contain as a rule a central core of horn. A sweat-duct passes from the extremity of some processes. The processes are sharply defined, the basal layer of cells being usually very small and flat. Prickle borders are absent save in a few places at or near the summits of the filiform projections. The shape and arrangement of the Malpighian cells show considerable deviation from the normal.

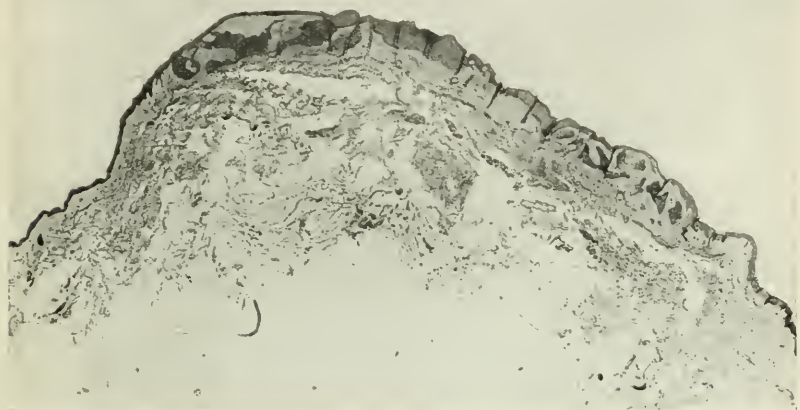


FIG. 5.—Specimen V: Hæmatoxylin and eosin, $\times 14$. To show the two areas of basal-celled carcinoma separated by a narrow interval.

Karyokinetic figures, are numerous. The dermal papillæ and a zone of dermis round the deep extremities of the epidermal processes are densely infiltrated with lymphocytes, plasma-cells, and occasional tissue mast-cells and eosinophil leucocytes. Beneath the epidermal processes and the subjacent zone of infiltration lie sweat-ducts, sweat-glands, a hair-follicle and portions of arrectores pilorum.

There is a considerable number of pigmented cells in the epithelial processes and in the interstitial tissue. This pigment again reacts like melanin.

The tumour resembles in general characters that of Specimen I. The proliferation of the dermal papillæ and of the epidermis is, however, much greater. There is no proof of malignant infiltration such as is present in Specimen II. *The tumour is a filiform, horny papil-*

loma exhibiting histological features which make a malignant behaviour even more probable than in Specimen I. The tumour contains a moderate amount of pigment, both within cells of the epidermal processes and within cells of the interstitial tissue.

Specimen V: S.D. 1822; November 29th, 1920.

Clinical note.—Completely excised grey area, which had a flat centre and a nodular periphery. The area lay over the left clavicle



FIG. 6.—Specimen V: Hæmatoxylin and eosin, $\times 176$. To show junction of basal-celled carcinoma with epidermis.

and had been observed for eighteen months. It was not attached deeply.

Macroscopic examination.—A lozenge-shaped portion of skin and subcutaneous tissue, measuring 1.8×0.8 cm. and 0.3 cm. in depth. In the centre is a smooth white area, which measures 0.4 by 0.2 cm., and has its long axis parallel to the long axis of the specimen. Round the margin of this area lie numerous raised nodules. The largest measure 0.2 cm. in diameter, and are purplish; the remainder are pearly grey, and sometimes exhibit a central spot of deep red. The cut surface shows white dermis, 0.2 cm. in depth, and beneath this,

in the centre of the specimen, yellow lipomatous tissue. In the upper part of the dermis, beneath the raised nodules, are minute, indistinct, brownish-yellow areas.

Microscopic examination.—A portion of skin containing sweat and sebaceous glands and arrectores pilorum; a hair-follicle is present in some sections.

In the centre of the section there are two elevations of the surface, separated by a narrow interval (Fig. 5). In the upper part of the dermis beneath these elevations are several broad, branching trabeculæ composed of epithelial cells. The cells in the extreme periphery of the trabeculæ are columnar or cubical, and are arranged in a regular, single layer. Within this peripheral layer the cells are usually of short spindle shape, but occasionally polygonal. The cells bear a distinct resemblance to the epidermal cells, but whilst the nuclei are of about the same size the cytoplasm is much less abundant. Consequently the trabeculæ contrast sharply with the epidermis in sections stained with hæmatoxylin and eosin, the trabeculæ being dark and blue, the epidermis being pale and purple. Moreover, the distinct prickle-borders seen in the epidermis are not present. Many of the trabeculæ appear to be completely isolated from the epidermis, but these are found in further sections to be continuous with the epidermis. Where the trabeculæ unite with the epidermis the transition from one type of cell to the other is usually very abrupt (Fig. 6). The narrower connections correspond apparently to inter-papillary processes.

The two groups of trabeculæ lie in the dermis above the level of the arrectores pilorum. The dermis in which they are embedded is greatly altered. It is changed into two oval areas, in which the collagenous fibres are more delicate and are more closely packed, cells are much more numerous, and the elastic fibres are extensively destroyed, often being represented by a few clumps of swollen fibres. The increased cellularity is partly due to fibroblastic proliferation, partly to an infiltration with plasma-cells, lymphocytes, tissue mast-cells and occasional eosinophil leucocytes.

In some sections there is hæmorrhage into the interstitial tissue of one of the groups of trabeculæ. This, doubtless, explains the purple or deep red colour which was seen in many nodules with the naked eye.

In the dermis beneath the tumours some of the sweat-ducts are greatly dilated, and are filled with granular substance.

In the epithelial trabeculae many cells contain within their cytoplasm a few small granules, or, less commonly, numerous large granules of a pigment of the colour of brown sugar. In the dermal interstitial tissue are many groups of large, round or spindle cells which are loaded with similar granules of pigment. This pigment does not give the Prussian-blue reaction for iron even when the test is reinforced by heat, is not destroyed by strong nitric acid (sp. gr. 1.42), is stained emerald-green by polychrome methylene-blue differentiated with tannic acid, and is not stained by carbol-fuchsin. As in previous specimens it appears, therefore, to be melanin. In the sections showing areas of hæmorrhage there are a very few cells containing granules which do give the Prussian-blue reaction for iron.

The epidermis upon the surface of the elevations is for the most part flat and narrow, the Malpighian layer being reduced frequently to four or five cells. Granular and horny layers are present. The prickly borders are distinct. A considerable number of cells at different levels in the Malpighian layer contain sparse, fine granules of melanin.

In the narrow interval between the two elevations the upper part of the dermis contains collagenous fibres, which are more delicate than in the normal dermis, but stouter than in the stroma of the elevations. There is very little evidence of abnormality in the arrangement of the fibres. This portion of the dermis is less cellular than the stroma of the tumours, and infiltration is almost confined to a narrow perivascular zone; the majority of the cells in this infiltration are plasma-cells and eosinophil leucocytes; only one or two pigmented cells are present. In its lower limit it contains groups of swollen elastic fibres; above this it contains abnormally delicate elastic fibrils. The epidermis in this interval is from ten to seventeen cells deep. In the centre of the Malpighian layer are a few cells without nuclei. Pigment is absent.

In the skin on either side of the central area which comprises the two elevations there is no visible abnormality. The Malpighian layer of the epidermis is about seven cells deep. Few of the cells are pigmented; when pigment is present it is almost always scanty and in fine granules. In the dermis, however, especially in its outer

layers, there is a considerable number of spindle and round cells loaded with coarse granules of melanin.

In this specimen there are two areas of typical *basal-celled carcinoma* separated by an interval. Pigmentation of the carcinomatous processes and of their interstitial stroma is greater than in any of the previous specimens. The epidermis over the carcinomata is richly pigmented; the adjacent epidermis contains little pigment, but there is a considerable number of pigmented cells in the adjacent dermis. The upper part of the dermis in the narrow interval between the two carcinomata is composed of abnormally slender collagenous fibres, and contains exceptionally delicate elastic fibres.

SUMMARY AND REMARKS.

Of the five tumours of the skin sent for microscopic examination, two (Specimens I and IV) are rapidly growing, filiform, horny papillomata. Both were excised from the back. In neither is there evidence of malignant infiltration, but in both there are histological features which make a malignant behaviour probable. In both cases, therefore, it is permissible to employ the adjective "*pre-cancerous*." In Specimen IV the features suggesting malignancy are more prominent than in Specimen I.

One tumour (Specimen II) is a squamous and horny carcinoma, the malignant nature of which is proved by extensive invasion of the surrounding dermis. The regional glands are not invaded. This tumour was excised from the arm.

Two tumours (Specimens III and V) are basal-celled carcinomata showing the histological features characteristic of "*rodent ulcer*." One (III) was excised from the thigh, the other (V) from over the left clavicle.

The case is remarkable, first, because of the occurrence of multiple benign (*pre-cancerous*) and malignant epithelial neoplasms of the skin; and secondly, because of the occurrence of two types of malignant neoplasm—squamous, horny-celled carcinoma and basal-celled carcinoma.

It is, perhaps, a platitude to state that the incidence of the different types of carcinoma depends upon the extent of epidermis involved in proliferation. In the squamous carcinoma, as in the two papillomata, the whole epidermis is implicated, though growth is most conspicuous

in the interpapillary processes. In the two basal-celled carcinomata growth has been limited to the lowermost layers of the Malpighian layer. Thus, in portions of Specimen V the growth of basal cells is seen to affect and extend from the tips of inter-papillary processes. It is not possible to determine to what extent the subjacent sweat-ducts and hair-follicles have participated.

In the description of the sections a note was made of phenomena which might possibly indicate a factor predisposing to the occurrence of multiple neoplasms of the skin. These phenomena are discussed in the following paragraphs.

Pigmentation of the epithelial cells and of cells in the interstitial tissue was found to be considerable in both basal-celled carcinomata. The adjacent skin was richly pigmented in one (Specimen III), but only slightly pigmented in the other (Specimen V); in this latter specimen, however, the epidermis over the growths was richly pigmented. Pigmentation was less in the two papillomata; the adjacent skin was extensively pigmented in one (Specimen I); no skin free from growth was available for examination in the other (Specimen IV). In the squamous and horny carcinoma (Specimen II) no pigmentation was found; the adjacent skin was only slightly pigmented. These observations appear to show that the amount of pigmentation of the neoplasms was related to the amount of pigmentation of the epidermis from which they arose, but they do not bring unequivocal evidence that the origin of the neoplasms was connected in any way with an excessive focal pigmentation of the skin.

Two abnormalities were observed in the skin at a little distance from the neoplasms. To the side of the squamous and horny carcinoma the interstitial tissue surrounding the sweat-glands was very abundant, and was mucoid. But this interstitial tissue did not show inflammatory infiltration, and no abnormality was recognisable in the included glandular tubes. In all probability the change in the interstitial tissue was an œdema, with subsequent mucoid transformation, due to the mass of growth in the adjacent dermis. Thus the papillary zone of the dermis in the same area was œdematous. It is impossible to accept this abnormality as a primary condition predisposing to the formation of the neoplasms.

In one section of Specimen I there was a small abnormal area in the skin at a little distance from the papilloma. A vertical vessel

entering a papilloma was surrounded by lymphocytic infiltration; the infiltration extended into the Malpighian layer of the epidermis, the cells of which were shrunken and widely separated. It would be rash to accept this single area of inflammation as representing the initial change which predisposed to the formation of the neoplasms.

In passing from the normal to the abnormal skin in Specimen I, the majority of the first elongated epidermal processes to be met contained small areas of perinuclear vacuolation or even of intercellular vacuolation. This vacuolation was, therefore, a phenomenon which had a close relation in time to the overgrowth of epidermis. There is evidence, however, against the acceptance of this change as the instigator of the abnormal downgrowth. Thus the vacuolation was not present in all the epidermal downgrowths, and it was not seen at all in the very similar excessive downgrowth at the margin of the squamous carcinoma in Specimen II. Moreover, perinuclear and intercellular vacuolations are very common secondary phenomena in various derangements of the skin.

All the neoplasms were associated with an inflammatory infiltration of the subjacent dermis. This infiltration was very great throughout the papilloma in Specimen I, at the margins of the carcinoma in Specimen II, and throughout the papilloma in Specimen IV. At the margins of the growths in Specimens I and II the appearances resembled closely those which are seen when there is a primary, chronic inflammation of the dermis—a dense infiltration of the dermis was associated with an overgrowth of epidermis. But an infiltration of similar cytology is constantly associated with primary carcinoma. Until it is proved that such infiltrations precede, and are not secondary to, all neoplastic epithelial proliferations, it is not possible to accept the infiltrations here as proof of the initiation of the growths by a dermal inflammation.

In Specimen V the lesion had a smooth, flat, white centre and a nodular periphery. This flat central area suggested scarring to the naked eye. The microscope showed that this area lay between two basal-celled carcinomata, and that in it the superficial layers of the dermis were of abnormal structure. The collagenous fibres were abnormally thin. There had been a destruction of elastic fibres: elastic fibres of ordinary calibre were represented only by a few clumps of greatly swollen, degenerated fibres in the deeper part of the

affected area; above these clumps elastic fibres were present of such tenuity that they were evidently of new formation. The histological appearances of the upper part of the dermis in this area, therefore, were those of a scar. But the conspicuous abnormality in the arrangement of the collagenous fibres which is found in traumatic scars was not present. The histological structure resembled that of a scar following inflammation. Moreover, this dermal inflammation had arisen at a considerably earlier date than that in the stroma of the carcinomatous nodules. The stroma of the carcinomata was much more cellular, contained much less numerous and more delicate collagenous fibrils, and was devoid of newly-formed elastic fibres. In this lesion, therefore, basal-celled carcinomata lay in the periphery of a scar left by an inflammation, and this inflammation was of earlier onset than that which was directly associated with the carcinomatous infiltration. In the lesion in Specimen V there is, therefore, less equivocal, though not conclusive, evidence that the onset of carcinoma was preceded by an inflammation of the skin.

I am indebted to Dr. T. C. Summers for the micro-photographs.

Remarks.—Several points of great interest are raised by the cases reviewed above:

(1) Are we dealing with some new type of dermatosis, or is it one which has been relegated previously to other groups?

I feel sure that some of the cases described as "multiple rodent ulcer" are of this type. They must be clearly distinguished from the group of "multiple rodent ulcers" which are probably of congenital origin as pointed out by Adamson, and which are allied to if not identical with the "multiple benign cystic epithelioma" of Brooke. Here the lesions are small and often appear in large numbers. They are basal-celled and have no tendency to metastases in the glands.

(2) It has been suggested that Bowen's dermatosis is a variety of Paget's disease, and in my own case I find a note suggesting that diagnosis in the earlier stages of the affection on the back. Histologically there is some degree of resemblance in the appearance of the cells which Darier has called "dyskeratotic." That these are evidence of malignancy appears improbable, as they are found not only in Bowen's dermatosis and in Paget's disease, which are, in my opinion, malignant *ab initio*, but also in the follicular keratosis known

as "Darier's disease" and in an affection so obviously benign as *Mollusum contagiosum*.

Clinically the dermatosis of Bowen differs from Paget's disease in certain important respects. I have seen many cases of Paget's disease both of the nipple and elsewhere, and I have never seen or read of a case in which the lesions were multiple. In Bowen's disease multiplicity of lesions is a characteristic feature. There is also an absence of the peculiar glazed, red, moist-looking surface which is peculiar to Paget's disease.

(3) My case presents an important difference from the other recorded cases in that characteristic basal-celled carcinoma co-existed with undoubted squamous carcinoma.

(4) My patient was believed to have psoriasis and had probably had intermittent treatment by arsenic. There was, however, no evidence of arsenical keratosis or pigmentation, and although arsenical cancer is so rare that few of us can have seen many cases, there is no resemblance in the lesions here to the cases of arsenical cancer I have seen.

I am of opinion that the earlier stages of some of the pre-cancerous patches on the back were called "psoriasis," for at the time of writing there is an infiltrated patch on the front of the patient's right knee which is undoubtedly Bowen's dermatosis, but which might be mistaken for a patch of psoriasis from which the scales have been removed.

(5) The treatment is obvious. The lesions must be removed by the knife or destroyed by diathermy, radium or massive doses of X-rays without delay, and any secondary glandular tumours must be excised.

I should like to add here my tribute to the admirable observations of Dr. Bowen who recognised the malignant character of this affection before the development of carcinoma.

Without Prof. Turnbull's lucid and exhaustive report on the histology of the lesions this case could not have been published, and I tender him my grateful thanks. I am also indebted to Dr. O'Donovan for help in the case report, to Mr. T. C. Summers for the microphotographs, and to Miss Mabel Green for the water-colour drawing here reproduced.

A CONDITION SOMEWHAT RESEMBLING LUPUS PERNIO IN A CHILD.

F. PARKES WEBER, M.A., M.D., F.R.C.P.

THE patient,* a boy, aged $2\frac{1}{2}$ years, shows a remarkable condition of his face, hands and feet. This condition, in regard to the hands and feet, might almost be termed "*Acrodermatitis chronica mutilans*." There is extreme redness, sometimes associated with lividity, of the cheeks and chin (Fig. 1). On the cheeks there are also fine hair-like superficial telangiectases. The skin of the cheeks is slightly scaly, and feels slightly thickened and infiltrated when one pinches it up. The edges of the pinnae of the ears are very hyperæmic and also scaly, as in the subjects of so-called "*chilblainy circulation*" during winter. There is ozæna, with an offensive muco-purulent discharge from the nose, the bridge of which is very depressed. The arms and legs show red, sometimes livid, reticular mottling. The hands present a very mutilated appearance, especially the right hand, owing to the tips of some of the fingers having been lost by gangrene or ulceration (Fig. 2). The skin of the hands has sometimes been swollen and red or cyanotic, but lately has become less turgid and paler. None of the toes have been lost, but the feet have been swollen and red or livid, like the hands; in the sole of each foot there is an irregularly-shaped chronic ulcer (Fig. 3). Of late the feet have been less swollen and paler, and the ulcers have become smaller.

Otherwise the condition of the child does not appear bad. The mental development seems to be normal. There is occasional moderate fever, probably connected chiefly with the nasal disease. There is no evidence of disease in the thoracic or abdominal viscera, excepting that a Röntgen skiagram of the thorax (Dr. James Metcalfe, March, 1921) shows a chain of enlarged hilus-glands on the right and some hilus-thickening on the left side; also slight shadowing in the mediastinal area. There is no enlargement of the superficial lymphatic glands, nor of the liver or spleen. The urine is free from albumen and sugar. Blood-count (March, 1921): Erythrocytes, 4,300,000, and white cells, 6,100, to the cubic millimetre of

* The case was demonstrated at the Dermatological Section of the Royal Society of Medicine on April 21st, 1921.



FIG. 1.



FIG. 2.

blood; hæmoglobin, 90 per cent. The differential count of white cells gave: Lymphocytes, 38·3 per cent.; polymorphonuclear leucocytes, 61·7 per cent.; no eosinophiles or mast-cells were seen during the count. There was no poikilocytosis or polychromatophilia, and



FIG. 3.

no abnormal cells of any kind were found. Röntgen skiagrams of the hands, besides more or less complete loss of some of the phalanges (owing to the tips of some of the fingers having been destroyed), show small areas of imperfect calcification or of decalcification

(such as Dr. H. G. Adamson kindly tells me have been noted in cases of Lupus pernio). A microscopical ("biopsy") examination of a small piece removed (February 28th, 1921) from the edge of the chronic ulcer on one foot showed the corium permeated with lympho-

cytes, plasma-cells and fibroblasts; no giant-cells and no tubercle bacilli were discovered.

Both of the patient's parents are apparently quite healthy, and their other child is a bright, well-built, normal-looking boy, aged $8\frac{1}{2}$ years. The mother has had no other children and no miscarriages.

The blood-serum of both the patient and his mother gave a negative Wassermann reaction on two occasions. This was when the patient was under Dr. E. A. Cockayne's care—previously to October 22nd, 1920, when he first came under my care. Dr. Cockayne also kindly informs me that an acid-fast bacillus was discovered in the nasal discharge. For the early history of the case I must refer to Dr. Cockayne's account (*Proc. Roy. Soc. Med.*, Section for the Study of Disease in Children, 1919-20, xiii, pp. 50-52). When Dr. Cockayne showed the case (January, 1920) I agreed with him that it was one of a kind of sclerodactylia. Afterwards, in spite of the patient's early age, I thought that it was allied to Lupus erythematosus, and Dr. Adamson suggested that it more nearly resembled Lupus pernio. The symptoms in the left hand apparently commenced at three weeks of age. The offensive nasal discharge was first noticed at the age of ten weeks, and has continued on and off since then. The child was breast-fed for the first seven weeks of life, and then brought up on various milk foods. There seems lately to have been a slight improvement under arsenical treatment. A thorough trial of mercurial treatment was made by Dr. Cockayne, but with no obvious benefit. Benzyl-benzoate, pituitary gland substance (by the mouth) and adrenalin (subcutaneous injections) have also been given, but without any striking good results. The child's weight on October 25th, 1920, was 1 st. 3 lb. 1 oz., and on March 14th, 1921, it was 1 st. 5 lb. 11 oz.

Dr. J. H. Sequeira has suggested that the case may be an exaggerated example of the toxic condition in very young children which has been described as "erythrœdema" by Dr. H. Swift and Dr. A. J. Wood, and was previously spoken of by Dr. W. Snowball (Melbourne, Australia) as "raw-beef hands and feet" (*cf.* annotation on the subject in the *Lancet*, London, 1921, i, p. 871).

ROYAL SOCIETY OF MEDICINE.

DERMATOLOGICAL SECTION.

MEETING held on February 17th, 1921, Dr. ARTHUR WHITFIELD, President of the Section, in the Chair.

Mr. J. E. R. McDONAGH read a paper entitled *Some Remarks on the Development of the Leishman-Donovan Bodies*, which is published in full on p. 182.

The PRESIDENT said that in the case of a slowly-growing infiltration of this kind it was not safe to say that because it had not been noticed more than forty-eight hours it had only been growing for that time. He thought it was clear, from the specimen, that this was a considerable number of weeks old. He had cut many sections of slowly-growing conditions, such as experimental tubercle, and there was not anything like the formation of inflammatory tissue in the first forty-eight hours which Mr. McDonagh had now shown. What were these sections stained with? The stain seemed to him to be of the pyronin-methyl-green type, which complicated matters enormously to the ordinary histologist in determining what had happened in attempts to stain Leishman-Donovan bodies with such dyes, as they stained peculiar bodies in the host tissues and their degenerations.

Mr. McDONAGH agreed with the President that the painting depicted a lesion more than forty-eight hours old, and he said that he should have stated that the section was made from a lesion which the patient had only noticed for two days. Much went on *in situ* before the lesion was visible to the naked eye, as was the case in a chancre for instance. The speaker had more experience with pyronin and methyl-green than with any other stains, and it was possible by various methods to control the staining of both dyes accurately, and the pictures given were as true as it was possible to render them.

Dr. J. L. BUNCH showed a case of *Boeck's sarcoid*. This woman, aged 40 years, had a number of small, pinkish growths on the chest, arms and body. The lesion in the centre of the chest started last September, and had been gradually growing ever since. It was now about the size of a pea. Later she developed a number of entirely new ones, some of them quite small. He showed a section under the microscope; it presented a typical granulomatous appearance. He showed them as sarcoids of Boeck, for want of a better name. He thought they might be of tuberculous origin. She told him her husband had his leg amputated for sarcoma, and she had a boy, now

aged 19 years, who, when young, had definite *Lupus vulgaris*, which was excised at the Evelina Hospital. The woman herself was healthy, and she said that neither her father nor her mother nor any near relation had had tubercle. The microscopical specimen was from a lesion in the neck. It seemed doubtful whether such granulomata disappeared without treatment, and treatment must consist of destruction of each separate nodule.

Dr. E. G. GRAHAM LITTLE showed a case for diagnosis. The patient had a lesion on the skin below, and spreading from the left eyelid. He was aged 40 years, and was under the care of Sir Arnold Lawson in October and November, 1920, who did some cutting operation, probably for Meibomian cyst. When he first saw the patient, on September 8th, he had nothing more than a pustular folliculitis along the ridge of the eyelid; there was no redness or appreciable change in the skin of the eyelid below the hairy border. He saw him only once; then he went to the South of France at the end of December, and again came to him in the middle of January. Then, for the first time, he had this curious affection of the skin of the lower eyelid, with a thin red edge bounding the lower margin. This edge had perceptibly advanced while he had been under observation; formerly it was $\frac{1}{8}$ in. below, now it was $\frac{1}{2}$ in. below the eyelid, the whole lesion being $\frac{3}{4}$ in. by $\frac{1}{2}$ in. in extent. Mr. Leslie Paton suggested a diagnosis of rodent ulcer, and with that idea he recommended the patient to have radium treatment. But Mr. Pinch, of the Radium Institute, declined to apply radium as he did not regard it as rodent—an opinion which he shared, and which was confirmed by Sir James Galloway. But they were puzzled as to the causation; Sir James Galloway suggested it was probably inflammatory, a reaction of the skin to what had been present earlier, and perhaps accentuated by the operative interference. He could feel no enlargements of glands. He was convinced it was not rodent ulcer, but was unable to supply a diagnosis. There was no history of syphilis, and infection was very improbable.

The PRESIDENT counselled searching for the *Spirochaeta pallida*, and having a Wassermann reaction done. It was probably a syphilitic lesion, possibly primary; it was exactly like primary syphilitic lesions of the eyelid which he had seen. Perhaps there had been an inoculation of syphilis on the top of a previous inflammatory condition. If both the investigations he suggested proved negative he would repeat the Wassermann test, and, indeed, do so weekly for several weeks. After the investigation he would give a little mercury.

Dr. E. G. GRAHAM LITTLE showed a case of *Morphœa guttata et arcata*. The patient was a man, aged 45 years. Eighteen months ago he noticed that the skin of his face caused him discomfort and trouble. There were broad and narrow bands of raised, very yellow, prominent infiltration. Six months ago he saw Dr. Sequeira two or three times, and he said that that expert's diagnosis was xanthoma. At that date it was more salient and more yellow than it was now. At present he thought the condition was morphœa; it was strictly symmetrical, and the onset was very acute. Fresh lesions of a guttate type were appearing at the margin of the two sclerodermia patches on the chest. His general condition was good; he was a healthy and active man, but his dental condition was not above suspicion, and he had suggested his having his bad teeth removed. The worst case of sclerodermia he had ever seen—he showed it there three or four years ago—was that of a woman whose condition was so wide-spread that it might be called universal; she was so crippled for years that she could not even feed herself. Her teeth were removed, and then all the symptoms of sclerodermic tension disappeared. The skin was still glossy, but was no longer tense, and she could not only feed herself, but could play the piano again—a thing which was inconceivable earlier. Her recovery could only be ascribed to the removal of her septic teeth.

Dr. BUNCH said he had under care at present a child who had a large patch of morphœa on the leg the size of a Tangerine orange, and it was becoming white. When it started it was prominent and yellow, as was the lesion in the present case, and only during the last nine months had it become white. Smaller patches were now appearing, but these were white, not yellow patches, and in that respect also his case resembled Dr. Little's.

Dr. E. G. GRAHAM LITTLE showed a case of *hæmatolymphangioma*. The patient was a girl, aged 12 years. She had a very large swelling under the chin, almost filling up the space between clavicle and chin, and giving on palpation the feeling of a "bag of worms" such as one meets with in varicocele. The skin over the swelling was bluish, and some very hard lumps (phleboliths?) would be felt in its substance. The tongue was considerably swollen, especially the left half, and it was studded with small persistent vesicles, rather like the case shown by the President at the last meeting (see p. 198). All these features were probably congenital. She had further a large baggy swelling over the left scapula covered by healthy skin and without any

discharge, the mass occupying an area about 6 in. by 4 in. This was of more recent development (some months). The patient was quite well developed otherwise, mentally and physically.

The PRESIDENT saw nothing against this being regarded as a large nævus-hæmangioma. The condition of the tongue consisted almost entirely of blood-vessels. The neck condition was a cavernous nævus, in which, he thought, calcification had occurred in places.

Dr. BARBER thought the swelling over the scapula was a cold tubercular abscess.

Dr. HENRY MACCORMAC showed a case of *Darier's disease*. The patient was a woman, aged 39 years. She stated the abnormal condition of the skin was first noticed when she was aged fourteen as a roughness, and that from this state gradual progress had taken place until the present time. The eruption was roughly symmetrical and of extensive distribution. It was most distinctly developed on the temples, forehead, arms, under the right breast, and right thigh and leg, and was also present, though in slighter degree, on the ears, naso-labial folds, back and arms. The palms were pitted and also presented small horny papules. No abnormal condition could be found on the tongue or nails.

The eruption in its most characteristic form was made up of greyish crusts, among which were numerous papules with central depression containing friable substance. There were no abnormal sensations, and there was no history of a similar condition in any other member of the family.

Microscopic sections showed the typical appearances met with in Darier's disease. The horny layer was distinctly exaggerated in places, and in this layer numerous "granules" could be seen. In the Malpighian layer characteristic "round bodies" were also present. There was some cellular infiltration of the dermis, but this did not present any unusual features.

The PRESIDENT did not think there could be any doubt as to the diagnosis, but he congratulated Dr. MacCormac on having made it, for the condition was so slight that only a good analytical examination would show this was anything out of the ordinary. It might easily have been passed over as simply an intractable dermatitis.

Dr. H. MACCORMAC showed a case of *tuberculide treated with novarsenobillon*. The patient, a woman, aged 27 years, had suffered from an eruption on the arms and legs for the last two and a half years.

Apart from this her general condition was good: there was no family history of tuberculosis; an enlarged lymphatic gland in the left axilla of four years' duration formed the only evidence of tuberculosis, and its nature was dubious. On the arms the eruption had corresponded to the papulo-necrotic type; on the legs the disease had assumed the Bazin form.

Various remedies had been tried without any success until intravenous medication with novarsenobillon was undertaken. Three injections, the first of 0.6 gm., the second and third 0.9 gm., had been given, with very satisfactory results. On the arms complete healing had taken place, and on the legs very considerable improvement.

Dr. GRAHAM LITTLE said he had tried novarsenobillon in some tuberculous conditions after reading Stokes's paper,* and among Stokes's cases were some of Erythema induratum, which distinctly improved. He (the speaker) had a case of a girl with combined syphilis and tubercle, which had existed since early childhood. He gave her injections by Pollitzer's intensive method, 0.6 gm. every two days for three doses, and in three weeks the effect on both diseases was marvellous. In another case very extensive congestive Lupus vulgaris of the face did remarkably well under injections of the same drug once a week.

Dr. BUNCH said that treatment by novarsenobillon was not always successful. He had under his care a boy whom he had shown before this Section with an extensive papulo-necrotic tuberculide, and six injections did him no good. Last year he died from tuberculous peritonitis.

Dr. F. PARKES WEBER did not think that salvarsan and neosalvarsan did much good for pulmonary tuberculosis and other internal tuberculous conditions, though cutaneous tuberculides and other non-syphilitic skin-affections might be improved. That improvement was probably due to the effect on the nutrition of the skin, as it was unlikely that the tubercle bacilli were killed by the treatment.

Dr. BARBER said that since he read Stokes's paper he had treated all his cases of Bazin's disease in this way, also a few cases of papulo-necrotic tuberculide of the extremities. The effect of the treatment depended much on the individual patient. Patients in whom the signs and symptoms of active tuberculosis were not very evident usually did well with injections of novarsenobillon. On the other hand, he had had one case of papulo-necrotic tuberculide, associated with tuberculous glands and disease of the lungs, in which a course of nine injections was of no apparent benefit. A case of the same type, however, in which active signs of tuberculosis were but little marked, did extremely well under it.

Dr. O'DONOVAN asked whether Dr. Barber's cases had been taken into hospital, cleaned up and fed. Such patients when so dealt with sometimes did well without novarsenobillon. In some cases the condition dragged on indefinitely. Adjuvant treatment was also of importance.

* Stokes, J. H., "Clinical Studies in Cutaneous Aspects of Tuberculosis," *Amer. Journ. Med. Sci.*, 1919, clvii, pp. 157, 313, 522.

Dr. W. J. O'DONOVAN showed a case of *Dermatitis herpetiformis*. E. C—, aged 15 years, was a schoolboy, who on account of nervousness could not sit for school or scholarship examinations. He had no brothers nor sisters; his father, a clerk, and his mother were alive and well. His past health had been good. In October, 1920, spots appeared on his chest and quickly attained a wide-spread distribution, appearing first as blisters and ending up as scabs.

On admission into hospital under Dr. J. H. Sequeira he presented (November 4th) a polycyclic wide-spread bullous eruption on the trunk and limbs; the fingers, toes and scalp were free; the eyelids, as if rubbed and so infected and irritated, were red and scaly. The tongue, gums and buccal mucosa were natural. There was no adenopathy. The circles of eruption had pink glazed centres with yellow or white crusted margins. In the middle of these circles (*see* photograph) or on sound skin were solitary or grouped vesicles up to 1 cm. diameter full of clear yellow fluid.

On November 6th there was a new outcrop of blebs in the right axilla and outside the right arm; no pain; the patient was not ill.

On November 9th an *auto-inoculation experiment* was attempted. Fluid from a new clear abdominal vesicle was applied to a sound area of skin on the right forearm; this site was scarified and allowed to dry without a dressing. On November 12th no reaction had occurred, but on November 13th three miliary vesicles occurred at the scarified area, and these enlarged, coalesced and crusted, as was usual. There was no similar vesicular reaction on scarified non-inoculated areas.

The boy was kept in bed on an ordinary diet, with a powder of zinc and calomel; continued new outcrops occurred, so that in the mornings his night-shirt was often stuck in many places. While the outbreak was extensive he had a remittent pyrexia of 101° to 102° F., with a pulse of 120 to 128 and a respiration-rate of 24 to 28. He was never severely ill, took his food well, and did not suffer from itching.

A blood-count made by the Clinical Laboratory on November 4th showed: Leucocytes, 17,600; polynuclear neutrophils, 72·5 per cent.; polynuclear eosinophils, 8·5 per cent.; small lymphocytes, 5·5 per cent.; large lymphocytes, 10·0 per cent.; large hyaline cells, 3·5 per cent.

Blood-cultures on the same date were sterile; films from the blisters showed polynuclears, a few eosinophils and epithelial cells. Cultures: *Staphylococcus albus*.

There was no albuminuria.

The boy had steadily improved, although no special benefit could be claimed from treatment by arsenic or by injections of horse-serum. New and smaller outbreaks had occurred from time to time, seen as clear bullæ in the axilla and as crusts upon erythematous areas on the forearms. Throughout—and this seemed atypical—itching had never been a feature of the case, nor had the boy even during the pyrexial period complained of any notable symptoms.

Dr. MACLEOD considered that the case was Dermatitis herpetiformis, although the distribution was unusual. The fact that the vesicles were sterile—the secondary contamination being due to *Staphylococcus albus*—and the grouping of the lesions corroborated this view.

The PRESIDENT did not doubt the diagnosis, but the inoculation question was an interesting one. In the case of a man who had very acute toxic eczema with true gout at the same time, he found that by simply allowing his own serum from uninfected vesicles to drop on his skin, an urticarial wheal was formed, then a row of vesicles, then a bullous condition. He then tried to see whether the same result would happen if he drew off the material with a hypodermic needle and allowed it to trickle over his own arm, but there was no effect. The boy in the case under discussion was, he thought, sensitive to his own serum.

Dr. WILFRID FOX said he once made experiments in artificial blistering in these cases, and he frequently saw crops of bullæ round about, and beyond the area where blistering fluid had been applied. These artificial bullæ, however, did not contain an excess of eosinophil cells.

Dr. W. J. O'DONOVAN showed a case of *Lupus vulgaris of the ear lobule*. He showed this case principally to obtain suggestions as to treatment, since the prognosis of long-standing tuberculosis of the skin seemed so hopeless and so tragic in its progressive deformity. Mrs. F. H—, aged 43 years, a native of South Wales, had had a swelling of the right ear since the age of fourteen. Married; husband alive and well. Had two children, who died young; no miscarriages, no family tuberculosis. Had measles in infancy, had always been very nervous, and had been deaf ever since the attack of measles. Her condition had been treated by ointments off and on for many years, by zinc ionisation for the last year and by two exposures to X-rays. He saw her first a week ago. Lobule of right ear enlarged, hanging down half an inch below that of left ear; it was swollen, flabby and

purplish; on pressure with a diascopé many yellowish miliary tubercles became visible. A circular area of brownish, slightly raised induration showing lupus nodules in its advancing margin extended directly on to the adjacent cheek. The face, she told him, had been affected for the last ten to twelve months, and because of this she came to London.

Dr. KNOWSLEY SIBLEY considered the case essentially one of tubercular lymphangitis—a solid œdema due to blocking of vessels of the ear, and of a more or less permanent nature. This patient had been under his care for some months. When she first came to him the size of the lobe of the ear was twice its present size. She had not had X-rays, but she had been ionised with zinc, and that had a very good effect. He did not expect that her state would ever be better than it was now. The condition on the side of the face was comparatively recent. He did not see any evidence of tubercular granulomata left on the skin of the ear, but there still were some on the cheek in the front of the ear.

The PRESIDENT said he had cut sections of lobes of ears like this. When lupus attacked the lobe of the ear it always enlarged as in this case—became indeed an elephantiasis. It was not a question of lymph-stasis, for the whole lobe of the ear would be seen to be made up of pale-staining epithelial cells, with no fibrous tissue left, and there would be very few plasma-cells. For that condition he used the term “hypertrophic lupus,” namely, where the hypertrophy was of the granuloma, as distinct from the verrucose type, in which the hypertrophy was in the epidermis. If a specialist in plastic surgery were consulted he thought a presentable face would be the result.

Dr. H. G. ADAMSON regarded the case as one of typical *Lupus vulgaris* of the lobe of the ear; such a swollen condition was not uncommon. As to treatment, he would first try painting with liquid and nitrate of mercury. If success did not result from that he would thoroughly scrape acid then cauterise with chloride of zinc. Whatever form of treatment was used, the lobe would be lost. Any plastic operation would be best done after the lupus had been cured.

Dr. MACCORMAC said that a similar case, that of a nursing sister, came under his notice in France. The condition had been thought to be a chilblain of the ear, but when the patient came under his observation it was possible to demonstrate the characteristic deposit of *Lupus vulgaris*. For some time acid nitrate of mercury was used, but it was finally decided to excise a portion of the ear, and this procedure was followed by a very good result.

Dr. O'DONOVAN (in reply) said he had been much impressed by the after-history of these apparently innocent tuberculides; the patients went from one hospital to another, and ended up with horrible epitheliomata, which demanded treatment on account of urgent hæmorrhage. In consideration of the views expressed he would deal with the condition surgically.

Dr. WILFRID FOX showed a case of *Lupus erythematosus*. The patient, a woman, aged 28 years, was married, and had no children. She had had the rash on her hands for four months and on the face

for two months. On the face it had been intermittent, coming out only at menstrual times, and vanishing in the intervals. She showed no personal signs of active tuberculosis, but there were scars on the neck. A brother who lived in the same house died of tubercle. She had had bad chilblains and very septic teeth. Only once had he seen such dense scarring in Lupus erythematosus; the scars were easily knocked and became septic. He asked for suggestions as to treatment. His intention was to give her detoxicated tuberculin vaccine. He had had one or two cases under this treatment, but so far the results had not been encouraging.

Dr. H. G. ADAMSON counselled keeping the patient in bed several months; the more acute cases of Lupus erythematosus often improved very much by mere rest in bed.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

A CASE OF GENERALISED SCLERODERMIA WITH RECOVERY.

LUIGI BUSSOLAI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1919, fasc. vi, p. 479.)

THE case was a boy, aged 10 years, who had an attack of pleurisy with effusion. During the illness he developed an acute sclerodermia, which began in neck, spread to face, limbs and body, producing the usual rather oedematous stiffness of the skin seen in early sclerodermia. A piece of skin excised showed oedema of the connective tissue with some connective-tissue proliferation. He was treated with iodides and arsenic internally and massage and hot-air baths locally, and left hospital much improved after some months. He continued treatment at home, and when seen four years later his skin had completely recovered.

R. C. L.

TUBERCULOSIS OF THE LIP. E. P. ZEISLER. (*Arch. of Derm. and Syph.*, 1921, iii, p. 14.)

A CASE is here reported which exhibited a solid tuberculoma of the lower lip, with ulcers of the buccal mucosa, associated with chronic pulmonary tuberculosis of the fibroid type. The differential diagnosis from chancre and epitheliomatous ulcerations is discussed in detail.

J. M. H. M.

ATTEMPT TO PRODUCE RHINOSCLEROMA EXPERIMENTALLY IN THE MONKEY. A. PASINI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 336.)

AFTER mentioning all the previous inoculation experiments of other workers the author records the inoculation of two monkeys with material from a case of

rhinoscleroma. The material was inserted into slits in the mucous membrane of the nose. Both animals were kept under observation for three years and after death were examined, but no sign of rhinoscleroma was at any time observed.

R. C. L.

PITYRIASIS RUBRA PILARIS. O. L. LEVIN and E. B. SMITH. (*Arch. of Derm. and Syph.*, 1921, iii, p. 40.)

REPORT is made here of a typical case of Pityriasis rubra pilaris in a male adult who exhibited symptoms of hypothyroidism, consisting of a dull, stupid facial expression, mental changes of a minor character, evidences of senility, sparseness of eyebrows and absence of the outer half, poor muscular tone, slow pulse, dry, itchy skin, and the thyroid gland not palpable.

The Pityriasis rubra pilaris showed rapid improvement under thyroid treatment, and apparent cure was effected by that alone.

J. M. H. M.

RESULTS OF HETERO-VACCINE THERAPY IN CERTAIN SKIN-AFFECTIONS AND SYPHILIS. CAPELLI and SIGNORELLI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. ii, p. 181.)

THE authors use a cholera vaccine prepared by Loeffler's method and injected together with physiological salt solution into a vein. Each case received one injection, which was followed by a rigor in from thirty to forty minutes, and the temperature rose to between 38.5° and 39.5° C. It remained up for about one hour and fell to normal in about six hours. With the exception of a slight headache the patient had no other symptoms. The results were as follows: In a case of Pemphigus vegetans the lesions showed a definite diminution for some days, but later there was a slight recurrence of eruption. In two cases of pustular eczema there was a diminution of the inflammation and suppuration, but an attack of influenza caused a recurrence to the former condition. In a case of lupoid sycosis the result was negative. Four cases of syphilis were treated. In the first the mucous patches disappeared, but there was no effect on the lichenoid eruption. In the second oral and perianal moist patches cleared up completely and remained healed twenty days later. In the third case the erythematous rash was accentuated, but there was partial resolution of moist patches. The fourth case was a pustular syphilide and in it the eruption was increased slightly at first, but later there was marked improvement and the case is still under observation. The author intends to continue his investigations in other cases.

R. C. L.

HISTOLOGICAL AND EXPERIMENTAL STUDY OF ALEPPO BOIL. J. KYRLE and J. REENSTIERNA. (*Acta Dermato-Venereologica*, i, fasc. i, p. 9.)

INOCULATION experiments from a case of Aleppo boil were carried out on monkeys and dogs through five generations. Passage through these animals reduced the period of incubation in the case of monkeys from four months to five weeks in the first and fourth generations respectively, but this result was not obtained in the case of dogs where there occurred a retardation of the effects of the virus. Histological examination showed the lupoid appearance to be a late occurrence at the time of the observed disappearance of the organisms from the tissues; the age of the lesion at the time of examination thus accounted for the varying anatomical appearances described in the literature. Reinoculation experiments in animals suggested that a condition of hypersensibility had been produced. A lengthy bibliography is attached.

W. J. O.

QUARTERLY SURVEY OF DERMATOLOGICAL LITERATURE.

ERYTHEMAS, INFLAMMATIONS, ETC.

- Actino-dermitis Cases due to "Sperry Apparatus."** A. MIBELLI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 458.)
- Acute Exudative Oedema.** L. MARTINOTTI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iv, p. 525.)
- Asparagus Juice, A Case of Dermatitis from.** BRENNINGS. (*Derm. Wochenschr.*, 1920, lxxi, p. 851.)
- Botriomycosis, Cases of.** G. MARIANI. (*Giorn. Ital. d. Mal. Ven. e della Pelle*, 1920, fasc. iii, p. 421.)
- Carbuncles, A Dissertation upon.** SIDNEY PHILLIPS. (*Lancet*, Jannary 8th, 1921, p. 61.)
- Dermatitis of the Forehead from Hat-leather Substitute.** J. APPEL. (*Derm. Wochenschr.*, 1920, lxxi, p. 775.)
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REVIEWS.

SKIN-DISEASES IN GENERAL PRACTICE.*

THOSE who require a small practical work on dermatology, suitable for use in general practice, will welcome the second edition of this book.

The author adheres to the regional method of classification, the reason for which he explains in the preface to the first edition. When discussing particular localities such as the scalp or genital regions the method possesses certain advantages, but it must give rise to unnecessary repetition and to some confusion when such comprehensive headings as "wide-spread eruptions" and "diseases limited in extent but irregular in distribution" are made use of. For example, Lichen planus and psoriasis are included in the former category and Mycosis fungoides and scleroderma in the latter, while pemphigus is relegated to a special group of bullous diseases and eczema has a separate chapter to itself.

The method adopted by Sabouraud in his topographical dermatology, to which the author refers in his preface, is much more precise. This classification, however, in no way interferes with the clinical descriptions, which are lucid and for the most part accurate, although exception might be taken to one or two statements, *e.g.* that Seborrhea corporis is always an extension of seborrhea of the scalp and that the stumps of Alopecia areata are not frayed out at the ends.

All the more common skin-diseases receive their fair share of attention, but to omit Darier's disease and parapsoriasis and to include parakeratosis and ochronosis seems to denote a lack of proportion. Much prominence is given to treatment and the sections on syphilis and ringworm have been brought up to date. There is also a useful chapter at the end of the book devoted to modern methods of treatment. The book is profusely illustrated with excellent coloured plates and photographs, and the printing and quality of the paper and binding are above the average.

SUPPLEMENT TO LEWIS'S LIBRARY CATALOGUE.†

IN our issue for January-March, 1919, was noticed the new edition of this Catalogue, which had been revised to December, 1917. A Supplement covering the years 1918-1920 has now been issued. It consists of 67 pages, 20 of which contain the Index of Subjects. Authors' names are given in alphabetical order under each heading, details of the particular book being found on reference to the author's name in the body of the Supplement. The Quarterly List of Additions issued in April includes the books added from January to March, 1921, and the regular publication of this list keeps the Catalogue up to date.

* *Skin-Diseases in General Practice: Their Recognition and Treatment.* 2nd Edition. By HALDIN DAVIS, M.B., B.Ch., B.A.Oxon., F.R.C.S.Eng., M.R.C.P. Pp. 345. 15 illustrations in colour and 73 in black and white. London: H. Frowde and Messrs. Hodder & Stoughton. £1 5s. net.

† *Catalogue of Lewis's Medical and Scientific Circulating Library*, including a classified Index of Subjects with the names of those authors who have treated upon them. *Supplement 1918-1920*, pp. 1-67. Price 1s. net. Complete Catalogue including Supplement. 12s. 6d. net.; to Subscribers, 6s. net.

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A POSSIBLE EXPLANATION OF THE INCREASED
INCIDENCE AND EARLY ONSET OF NEURO-
SYPHILIS.

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THERE seems little reason to doubt that the incidence of neuro-syphilis is on the increase. It is strange, therefore, that more consideration has not been given to this circumstance, either as regards a possible explanation or a critical review of our present treatment methods. One must admit that the incidence of nervous syphilis bears a direct relation to our methods of dealing with syphilis in its early stages. It is clear, then, that the flaws, faults and fallacies of our methods must be seriously reconsidered with a view to elucidating the cause and devising a remedy.

Since the war there has been a general increase of non-syphilitic nervous disorders, such as neuroses, neurasthenias, insanities, and so on, and it is possible there may be some increase of susceptibility. This point must be borne in mind. It will not explain, however, the vast increase of early central nervous system involvement in syphilis since the dawn of the salvarsan era.

Of recent years the treatment of early syphilis has been so much a matter of routine, so much a matter of treating cases *en masse*, and so much a scheme of following a hard and fast time-table, a fixed scale of doses at fixed intervals; it has been so dominated, not by clinical acumen, but by pathological findings and serological reports, that the patient is never an individual case but one of a series, his prognosis and ultimate state are obscured by an effort at purely symptomatic immediate treatment, and any effort to keep the fundamental aims of chemotherapy in clear view is overpowered by a feeling of exhilaration at the prompt disappearance of immediate symptoms, a satisfactory reading of an empirical non-specific serological test, and an absolute and unreasoning faith in the efficacy of a modern and unproved chemiotherapeutic agent.

Whatever the original intention of the "Army course" of treatment of early syphilis may have been, we feel that now we can say of it that it fulfilled one function only. It served to cause the disappearance of immediate symptoms, and enabled the soldier to return to duty non-infectious and efficient for a considerable period. An ultimate cure followed in only a few cases, and the susceptibility to relapses in the vast majority of cases will doubtless be demonstrated in this country for many years to come.

Such a scheme of treatment is at any time open to be a source of endless error. Series of cases may show many points in common, but the patient, the personal equation, must suffice to make each case an individual. With the present mania for routine in the treatment of syphilis this fact has been too often forgotten, and this alone may be responsible for the fact that symptomatic treatment has been confounded with treatment of the patient, that the incidence of nervous syphilis has increased enormously, and that its alarmingly early appearance has arrived and been accepted by us without the comment due.

The aim of chemotherapy is to stimulate antibody production and to kill the attacking organisms or render them dormant. In the latter event the patient's resistance must be kept at its maximum indefinitely so that the organisms may be kept continually dormant. This point has been lost sight of, and is possibly the fundamental reason for the early appearance and increased incidence of nervous symptoms in syphilis. It is the aim of chemotherapy to maintain the

patient's resistance in such a state that the organisms are compelled to remain dormant. It is not the aim of chemotherapy to render the organisms dormant and allow the patient's resistance to look after itself when required. This, however, would appear to be the guiding principle underlying our modern methods of dealing with early syphilis, and therein lies the weakest spot in our frontal attack. While the frontal attack may be immediately successful, our success is seldom pushed home, and later on we are robbed of the fruits of victory. Indeed, in a large percentage of cases our success is only apparent, and an early and precipitate neuro-syphilide drags its weary course to remind us continually of our complete and crushing defeat.

When a syphilitic infection occurs its earliest activities are purely local. Very soon, however, it proceeds to generalisation, and this is in progress before the end of the Wassermann-negative stage. It is unsafe, therefore, to give a prognosis of early and absolute cure simply because treatment has been started before the Wassermann reaction became positive. When the generalisation stage has begun the organisms are scattered in the blood-stream, the lesions they cause are symmetrical, and the focus of their obvious activity is peripheral. Nevertheless, at this time they are busily invading the cerebro-spinal system and damaging its capillaries. The deep organs are also invaded. But while the lesions are peripheral and the deep organs escape damage, so also does the nervous system fail to show any clinical reaction to this parasitic invasion. Cases of neuro-syphilis occurring before the primary sore has yet healed have been noted and recorded, but these are comparatively rare. The difference is probably one of degree.

So long as the spirochaetal attack is purely local, the production of antibodies is more or less local. Later on, however, the production of antibodies becomes general. Coincident with this the migration of organisms has become general, and the blood-stream is flooded with organisms and antibodies. These antibodies circulate in the blood-serum, and while the spirochæte is otherwise unhampered in its activities the supply of antibodies is unlimited, because the stimulus is ever present.

As far as the cerebro-spinal fluid is concerned we know little of it either in health or disease. It is generally believed to be a true

secretion produced by the choroid plexus. Its functions are complex, but chief among them may be regarded as—

(1) Dealing with metabolic changes in the brain and cord, rendering complex products innocuous and inert; and—

(2) Maintaining a physiological balance of volume during dilation and contraction of blood-vessels.

In syphilis it is most probable that antibodies are carried to the cerebro-spinal axis by the blood-stream. Other elements have been considered adjuvants, as, for example, the lymphocytes coming from the lymphatics of the meninges and nerve-tissue, but one must look upon the blood-stream as being responsible for the main supply. The presence of antibodies in the cerebro-spinal fluid is probably accidental, as also is the presence of spirochaetes; in other words, they are found in the spinal fluid because they happen to be present in the meninges, or because the choroid plexus has become unduly permeable. It will be seen, then, that the intra-thecal supply of antibodies is much weaker and much more limited than the supply available in the general systemic circulation, and to a very considerable extent dependent on it.

We are still much in the dark as to the mechanism of immunity. The subject is confused by the numerous terms invented by workers attacking the question from different aspects. The bacteriologist stops when he has worked down to agglutinins, precipitins, antibodies, etc. He does not inquire as to what physical or chemical forces these represent. The biochemist advances from the principles of chemistry and physics and tries to fit these into the facts of immunity. These latter have now advanced so far as to find that practically all the stages of digestion, assimilation and metabolism depend on the relatively simple process of hydrolysis, oxidation and reduction. Further, it is most probable that the same processes, and only these, are at work in immunity. Antibodies, etc., in all probability are colloidal particles. The ultramicroscopic particles of a substance in the colloid state give an enormous development of surface. The particles differ from molecules in size, and in the fact that the electric charge of the colloid particle can vary in quantity and in sign. Surface tension is a power of great magnitude in colloids, and such dependent phenomena as absorption assume considerable importance. The colloid antibodies exert a strong power in respect of hydrolysis,

oxidation, or reduction—one, two, or all of these. They may be enzymic or catalytic in nature. Possibly they first combine with some essential constituent of the organism, and here may lie the explanation of specificity. There is much evidence to show that specificity is relative, or a matter of degree.

The presence of the spirochaetes stimulates the mechanism of immunity, and antibodies, whatever their nature may be, are produced. Arsenobenzene is toxic to the spirochaetes, and as they are killed the stimulus of antibody production is removed, for arsenobenzene does not cause any output of antibody. Unfortunately arsenobenzene does not kill all the organisms as a rule, whilst both the arsenic and the di-amino radicles are toxic, damage the tissues and lessen the power of producing any further supplies of antibody.

Arsenobenzene is readily oxidised, and when oxidised is more highly toxic. If it combines with the spirochaetes it might easily kill them by depriving them of intrinsic or extrinsic oxygen or both, or by direct toxicity after its oxidation in the body of the organism. Arsenic, however, tends to injure the human cerebro-spinal axis, and thus it seems likely that the use of an arsenical spirochaeticide may *pari passu* injure the nerve tissues. If all the spirochaetes are not killed the damaged central nervous system may be the weakest site for attack by the survivors.

Again, if the drug combines with, say, liver-cells, and becomes oxidised and toxic, all the symptoms of acute yellow atrophy due to arsenic may appear. There is no apparent reason why some colloid, non-toxic to the tissues, but with the power of uniting with the spirochaete and upsetting its oxidative processes, should not be found. Meantime the arsenobenzene preparations are our high-water mark of success, but they will be by no means the last word in the treatment of syphilis. Again, Nature produces antibodies, of high degree of specificity, usually in response to infections or injections of killed bacilli, and of lower degree or more general specificity in response to injections of other material, such as peptone, kaolin, etc., and also apparently during the heightened metabolism of pyrexia, etc. A stimulant may be found for the production of large amounts of antibodies of high grade specificity as regards the *Spirochaeta pallidum*.

Since the appearance or non-appearance of neuro-syphilis depend

on the antibody supply and bears a direct relation to it, we must consider what factors in our treatment methods affect this supply and in what manner they operate. To make the picture clear for purposes of comparison, let us resume briefly a typical case untreated, treated with mercury and potassium iodide alone, and lastly, treated by modern intensive methods—that is to say, with arseno-benzene.

(1) *Case untreated.*—The primary chancre appears and eventually heals spontaneously, and ere this is accomplished the stage of generalisation becomes manifest. This stage is ushered in after an incubation period of from one to three months with a feeling of malaise and discomfort, and possibly a slight evening rise of temperature. An exanthem appears affecting the superficial layers of the skin in a regular symmetrical manner—a generalised capillaritis. The mucous membranes show characteristic lesions, an adenitis becomes general, and, taking from two to four weeks to develop fully, its decline extends over a period of about two months. These manifestations are accompanied by symmetrical ulceration of the tonsils, there may be a symmetrical iritis or retinitis. The patient loses flesh, is restless and slightly feverish, and complains of poor appetite and pains in the bones and joints. His hair is dry and thin, and occasional swellings of certain bones, particularly the skull-bones, occur. Such a periostitis, however, is always transitory. At this stage the patient may become suddenly deaf in one or both ears—a circumstance usually accompanied by facial paralysis. In most cases these secondary symptoms do not disappear for twelve to eighteen months, but on occasion they have all faded away by the end of six months. Relapse is rare.

When these symptoms have passed away there is usually a period of latency during which the patient enjoys good health. This may last from a few months to a few years. Meanwhile the host has been steadily manufacturing antibodies. Through a long period of years this supply of antibodies has been maintained and has successfully kept the organisms dormant. The organisms have, nevertheless, left their mark on the host's powers of resistance and general and localised impairment of tissues results. Permanent tissue-modification is certain to have occurred: the parasite has been hindered, not killed. Moreover, at no time has the supply of antibodies been excessive, and there is no reservoir of supplies to cope with an

emergency. The whole steady supply is constantly concerned with keeping the organisms in check, although quite unable to exterminate them finally. The central nervous system has been bathed in antibodies all this time, and any enterprising organism is afforded little or no opportunity to do harm.

The organisms, collected here and there in devitalised areas in the deeper tissues, attack their surroundings, and the antibodies available, even when fully mobilised, cannot prevent further damage to these weakened tissues. Then appear the so-called tertiary phenomena, characterised by chronic inflammatory indurations affecting the deep-seated tissues or the deeper layers of the superficial ones, asymmetrical in distribution, uncertain in duration, and showing a remarkable tendency to relapse. Subcutaneous tissue, periosteum, the muscles, the vessel walls, the internal viscera and the organs of special sense are all more or less attacked. These symptoms have little tendency to spontaneous cure but tend rather to relapse frequently. The parasite is protected from antibody attack in many scar-tissue strongholds. The source of the supply of antibody is limited by the extensive devitalised tissue modification and the host's general resistance is diminished.

Usually the intra-theal circulation, however, has acquired a sufficient supply of antibodies to keep its own particular tissues intact, and neuro-syphilides do not appear. This fact is clearly demonstrated among the natives of South Africa, where *tabes dorsalis* and *dementia paralytica* are practically unknown, while untreated tertiary syphilides, causing almost unbelievable destruction of tissue and disfigurement so terrible that the leper by comparison would appear a desirable companion, are common everyday landmarks in the more remote kaffir kraals and locations. Indeed, the only cases of native neuro-syphilis that have come to our notice have been arsenobenzene-treated cases.

Occasionally the intra-theal antibody supply proved insufficient, for syphilis of the cerebro-spinal axis was mentioned by Van Swieten in 1772, but was not recognised by Hunter. It was studied in the nineteenth century by Broadbent, Buzzard, Hughlings Jackson, Hutchinson, and Gowers in England, and by Charcot and Fournier in France. "Syphilitic neuroma" was described by Hutchinson (1), and tertiary syphilis was a well-recognised cause of paralytic affections

of the cranial nerves, and more indirectly of tabes dorsalis and dementia paralytica. Fournier discovered the luetic origin of the latter in 1875.

(2) *Case treated with mercury and iodides.*—Mercury, started early, causes the induration of the chancre to melt away, the sore to heal, the eruption to vanish, and the general malaise and fever to disappear. Hutchinson stated that under the influence of iodides the terrors of the tertiary stage had to a large extent vanished. Large gummata cleared up, periosteal pains ceased, and ulcers healed. Indeed he went much further, and declared that “if such treatment is faithfully carried out syphilis may be wholly suppressed, and the patient may never know anything about his malady beyond its primary symptoms. In many cases he may come to doubt the diagnosis on account of the rapidity and completeness of his cure.”

Nevertheless many cases treated over long periods fail to give this happy result. More often the picture is simply a modified version of the previous case. The secondary manifestations appear, but their stay is less prolonged. The tertiary lesions also appear in due course, but the tissue destruction is less severe.

Relapses were not unknown. An excellent example is found in Hutchinson’s “after-marriage chancre,” a temporary abrasion on the penis of a man who had previously had syphilis, following excessive nuptial coitus. These occurred as long as two years after the initial lesion.

Fournier describes general loss of sensibility to pain in the skin during the secondary stage. Myelitis, transient paraplegia, usually symmetrical, affections of single nerves, and loss of function of bladder and rectal sphincters were frequently described. They were, however, transient, and were not considered to indicate any permanent damage to the nervous tissue proper.

Symptoms of cerebral irritation in association with periostitis of the bones of the skull were recognised and described, as also were intracranial abscess, melancholia, and acute mania. These, however, are very rare. Tabes dorsalis was so late a sequela that syphilis was considered merely a predisposing rather than a necessary cause. Along with dementia paralytica it was regarded not as syphilitic, but as para- or meta-syphilitic in origin.

At the present time in many of the outlying districts of South

Africa syphilis treated with mercury and potassium iodide only is quite common among natives. The large proportion of these have been imperfectly and only intermittently treated, and the ravages of tertiary syphilis are very apparent. It is the fact, however, that cerebro-spinal syphilis among these natives is unknown.

The most thorough mercurial treatment does not offer protection against neuro-syphilis. From the evidence of South African natives it is doubtful whether the accepted statement that nerve complications appear more frequently in cases of untreated or ill-treated syphilis is correct. Dr. Max Mehliß, of Rietfontein Lazaretto, who has treated over 160,000 syphilitic natives, assures us that neuro-syphilides of even the mildest variety have only appeared among the natives since the introduction of arsenobenzene into the treatment routine. For this reason he uses it only to deal with immediate symptoms, and for the rest trusts entirely to mercurial inunction over very long periods for the sterilisation of his patients. His results are most happy, and a neuro-syphilide is an absolute curiosity.

(3) *Case treated by modern intensive methods.*—In 70 per cent. of all cases of syphilis treatment is not commenced until the stage of generalisation is well developed. The clinical picture undergoes a sudden change. Primary and secondary lesions clear up and disappear with wonderful rapidity. In contrast to the two previous cases, however, evidence of early intra-theal involvement is quite common if looked for. Clinical evidence is by no means rare, and serological evidence is often easily obtained.

Cases of alopecia and syphilitic leucoderma appearing during the early generalisation stage are met with frequently. If the view that these conditions are of a neurotrophic nature be accepted, we have direct evidence of the damaging effect of early intra-theal invasion. Meningitis may occur before the primary lesion is healed, while treatment is being carried on, or from three to six months after the last dose of arsenobenzene had been given. This is possibly the commonest form of neuro-syphilis met with since the dawn of the arsenobenzene era.

Tabes dorsalis, since the general introduction of arsenobenzene, has shown a distinct tendency to acceleration of onset. Its incidence, also, is definitely on the increase. Cases of posterior column degeneration occurring from two to eighteen months after infection

have been recorded, and have come under the observation of the writers. The precipitation of the onset of tabes by trauma is well known, and similar precipitation has frequently followed treatment inaugurated because the examination of the spinal fluid gave a positive result in an apparently healthy subject.

The picture of the case treated by arsenobenzene is one of a rapid disappearance of early symptoms, liable to be followed at an early date by clinical relapses, so-called neuro-recurrences, neurotrophic changes, and precipitate onset of myelitis and extensive intra-thecal pathologic changes.

EARLY NEURO-SYPHILIS.

Much work has been done to determine the changes in the spinal fluid in early syphilis. Hutchinson (1) recognised that symptoms of nervous disturbance, sometimes local and sometimes general, do occur during the secondary stage. These he considered as simply transient, readily controlled by vigorous mercurial treatment, and when once cured showing no tendency to relapse; but if untreated much serious anatomical damage might result. It would seem, then, that Hutchinson held, or would have sympathised with, the view that invasion of the cerebro-spinal axis took place coincident with the general systemic generalisation.

In 1903 Ravaut (2) demonstrated for the first time that changes might exist in the spinal fluid in syphilitics who showed no clinical evidence of nervous disease. He stated that 62 per cent. of cases of secondary syphilis have some abnormality of their central nervous systems.

The earliest changes due to syphilis are of the nature of damage to the capillaries. If we knew more of the histological effects of arsenobenzene on the normal and on the early syphilitic capillary, we would probably get much information regarding the precipitation in certain types of cases of early neuro-syphilis. Post-mortem findings in cases of hæmorrhagic encephalitis ("serous apoplexy" of the French school) or toxic jaundice teach us little, except that the vessels are involved to a considerable extent. Sub-pleural petechiæ, sub-pericardial hæmorrhages, submucous ecchymoses of stomach, bowel and omentum are among the most constant features. Finger in 1911

asserted that salvarsan was liable to induce a toxic reaction in the cerebro-spinal axis. He was the first to draw attention to the fact that the number of nervous signs increased after the introduction of salvarsan. Thereafter much work was done with a view to discovering what changes took place in the spinal fluid in the early stages of syphilis, to compare them with changes which took place later on, and if possible to interpret their findings. Methods of examination have been devised by Nonné and Apelt (1912), Noguchi (1911), Kaplan (1914), Lange (1912), Miller and Levy, Thomson, Ross and Jones, Boyd, McDonagh and many others. Boas and Lind (1911) (3), Fraenkel (1912) (4), and on a larger scale Dreyfus (5), Davis and Eugman (1913) (6) reported the result of their investigations. Gutmann (1914) (7), With (1918) (8), and Parnell and Fildes (9), Van der Valk (10), and Klauder (1919) (11), all were able to record early changes. *Spirochaeta pallidum* has been demonstrated in the spinal fluid of early syphilis and of apes successfully inoculated therewith by several investigators. The work of Hoffmann is particularly instructive, and the phenomenon of a central nervous system involvement as the initial lesion in inoculated rabbits has been demonstrated by Steiner, Jacob and Weygandt.

Such changes in the spinal fluid in primary and secondary syphilis lend themselves to various interpretations. Some observers conclude that these changes are evidence only of transient meningeal irritation and do not necessarily signify nervous system involvement. Others aver that they furnish direct evidence of syphilitic attack on the nervous system. Again, some workers look upon these changes as a signal for immediate energetic treatment, while others consider them merely as an indication of nervous system reaction to organismal invasion.

Gongerot (12) explains neuro- and other recurrences after arsenical treatment as due to a toxic effect and an exacerbation of syphilis. The syphilis has become modified, so that the lesions assume the character of the spontaneous but destructive tertiary stage. If the toxic element predominates further treatment can only do harm, but if the other is the chief cause further treatment will usually cure.

The evidence of demonstrated spirochaetes in the intra-theal circulation is conclusive. Had they not been in the meninges and choroid plexus they could not have found their way here. So also

are such cases as that reported by Van der Valk (10), where, with a chancre but seven days old, positive changes were found in the spinal fluid while the serum Wassermann reaction was still negative.

CLINICAL EVIDENCE OF EARLY NEURO-SYPHILIS.

The cortex and the base form the focus of syphilitic activity far oftener than does the deeper substance of the brain. On the cortex the psychomotor region is most commonly affected, with resulting affection of the motility of the extremities, the facial muscles and speech. In the base the interpeduncular space and its surroundings is the usual seat of syphilitic processes. The former localisation explains the paresis group and so-called monoplegias, the motor aphasias and the Jacksonian epilepsy, the latter paralysis of eye-muscles, particularly the oculomotor and abducens.

The cortical as well as the basal process can produce hemiplegia. After suddenly-appearing brain symptoms of diffuse meningitic character only focal symptoms remain, such as aphasia, ptosis, or the affection of isolated groups of muscles. The symptoms are purely transitory, they pass without treatment, and as a rule are the basis of a good prognosis as far as later neuro-syphilis is concerned. With spasmodic arsenobenzene treatment, on the other hand, they are often precipitated, aggravated and perpetuated.

Patients with gummatous lesions, even of the central nervous system, appear to be exempt from tabes and dementia paralytica. This is simply a question of efficient and uninterrupted antibody supply. Van der Valk believes that these conditions follow syphilis which is originally benign and that malignant syphilis is never liable to these sequelæ. He has expressed the opinion that during the latent secondary stage there occurs a critical period when the disease may diverge to tertiary or to neuro-syphilis. This is probably correct, for it resolves itself into a question of how long an efficient supply of antibodies is available for the cerebro-spinal axis. A local trauma may decide the time and site of appearance of a gumma. In the central nervous systems of our post-war population, the long spell of anxiety, high nervous tension and excitement may have caused sufficient damage to decide the site and time of onset of neuro-syphilis. As regards the possibility of a familial peculiarity or susceptibility

towards tabes, Fleming Burrow describes a family where five out of six developed tabes following a venereal infection. He concludes that "tabes dorsalis cannot be attributed to a special strain of spirochaete introduced at the initial infection, but is much more likely to be due to the spirochaete acting upon tissues specially sensitised either by natural family peculiarity or by certain methods of treatment." Levaditi and Marie (13) believe there are two strains of syphilitic virus.

Early neuro-syphilis appearing during the primary and secondary stages, that is to say, the stage of generalisation, usually presents the symptoms of meningitis. The involvement may be meningeal, vascular, or parenchymatous. The nervous system may not react, but the organismal invasion is there nevertheless. Reaction may show itself as serological changes in the spinal fluid, or as definite clinical symptoms. The following groups may therefore be distinguished:

(1) The asymptomatic group: Here we find a total lack of symptoms with evidence of meningeal involvement in the spinal fluid. This is by far the commonest type.

(2) The meningeal group: This group is characterised by severe headache, insomnia or somnolence, vertigo, noises in the head, slight severe or complete deafness, optic neuritis, diplopia or other visual disturbances, and paralysis of the recti muscles.

(3) The neurotrophic group: Here we recognise lichenoid and acneiform syphilides, alopecia and leucoderma accompanied by pathologic changes in the spinal fluid and possibly meningeal symptoms.

(4) The neuro-recurrence group: This is a fairly large group, which includes such phenomena as affections of individual nerves, inequality of pupils, and sluggish pupillary reflexes, particularly to light. Two well-defined groups are evident: (*a*) those which occur within twenty-four to thirty-six hours after injection of arsenobenzene, and (*b*) those which occur several weeks or months after the last injection.

(5) Psychic group: Such psychic changes as melancholia, apathy, irritability and moodiness are fairly common occurrences. In addition one meets such conditions as disturbances of speech, failing memory, brutality and suicidal notions.

All these conditions are precipitated by our present methods of treatment. Encephalitis and dermatitis have been stated to occur after an overdose of arsenobenzene, but cases have been observed by the writers where there was no question of overdose in the ordinary way. Cerebral symptoms have frequently followed the last injection of a series of doses—exhibited as severe headaches, sickness, vomiting, loss of consciousness and convulsions. It is quite possible that these symptoms, including the meningeal and neuro-recurrence groups, are simply expressions of the Jarisch-Herxheimer reaction. This view is supported by the evidence of cases of early syphilitic meningitis which light up with arsenobenzene treatment, show a marked resistance to it, and those which progress in spite of it.

(To be continued.)

CLINICAL NOTES.

HÆMORRHAGIC PURPURA FOLLOWING THE THERAPEUTIC ADMINISTRATION OF NEOSALVARSAN.

THOMAS ANWYL-DAVIES, M.B., B.S.LOND., M.R.C.S.ENG.

*From the Department of Venereal Diseases, St. Thomas's Hospital:—
Director: Colonel L. W. Harrison, D.S.O.*

A. B—, a woman aged 23 years, of healthy appearance, visited the Venereal Department of St. Thomas's Hospital as she contemplated marriage, but feared infection had occurred some six years previously, although she had no positive grounds for believing such to be the case, as no suspicious symptoms had arisen, apart from a nervous breakdown six months ago.

Examination revealed no definite signs of syphilis, either old, recent, or congenital, no scars, no general adenitis or involvement of the central nervous system. The cervix was normal and the cervical canal was round and not torn, in spite of a six months' premature birth which had occurred six years previously. This history, with the positive reaction of the blood-serum to the Wassermann test, enabled one to make a diagnosis of latent syphilis. A combined

course of arsenic and mercury was administered in the form of novarsenobillon intravenously, and metallic mercurial cream intramuscularly into the buttock, as follows :

	N.A.B.	Mercury.
1st week . . .	.45 grm.	1 gr.
2nd „ . . .	.45 „	1 „
3rd „ . . .	.45 „	1 „
5th „ . . .	.6 „	1 „
6th „ . . .	.6 „	1 „
8th „ . . .	.75 „	1 „
9th „ . . .	.75 „	1 „
10th, 11th, 12th week :	Pot. Iodid. mixture only.	
13th week . . .	.75 grm.	1 gr.

Twelve hours after the last injection the soles of both feet began to swell; twenty-four hours later a rash appeared all over the body except the face, not superficial and scaly like the usual arsenical dermatitis, but, according to the patient's description, similar to "small dilated veins in the skin." The temperature rose to 102° F., following a series of rigors, and accompanied by severe aching of the joints all over the body: there was no sickness, diarrhœa, abdominal colic, or headache, but anorexia.

When seen a week later, dark purple petechiæ covered the skin of the trunk and legs, which disappeared in three days from the body, but were most marked on the legs, where they persisted for ten days. Both legs and thighs as high as Poupart's ligament were covered with innumerable purpuric spots united by a network of dilated venules in the skin. The spots were not raised or œdematous as in the urticarial purpura following serum injections. The condition was similar to that frequently seen on the nose in middle-aged people, but with the addition of purpuric spots. A week later the purpura had disappeared, leaving only a slight scaling of the skin of the legs. The general condition was good.

This case appears to be similar to three cases reported in the *Bulletin de la Société Médicale des Hôpitaux*, Paris, July, 1919, by MM. Labbe, Langlois, and previously by M. Leredde, in which the same symptoms were accompanied by hæmorrhages from the mucous membranes, gums, and nose.

In the present subacute case, where the recovery was uneventful,

there was no sickness or abdominal colic to suggest hæmorrhage into the stomach or intestines, and no bleeding from the gums or nostrils.

No jaundice or arsenical dermatitis supervened, but it is reasonable to suppose that, had the injections been continued, the process of capillary leakage already set up by the drug would have become so acute as to prove fatal.

It seems possible that this condition may be similar in nature to those cases of epileptiform convulsions following injections, in which post-mortem examination showed punctate hæmorrhages in the brain, and attributable to damage of capillary epithelium by the remedy.

A CASE OF SCLERODERMIA GUTTATA.

LOUIS SAVATARD,

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ALTHOUGH within the last few years numerous contributions have appeared on guttate sclerodermia, the following case, which I exhibited at a recent meeting of the Manchester Dermatological Society, is so unique that I think it worthy of a brief description.

The patient, a man, aged 46 years, sent to me by Dr. Flack, of Radcliffe, in April, 1920, for a "washleather rash" which had not yielded to treatment, presented on both arms, and especially on their flexor aspects, numerous small round dead-white lesions, many of which were bounded by a telangiectatic halo. The lesions, though in places contiguous, were nowhere confluent. The history was that these spots had first appeared on the forearms four years ago, and at the time of eruption a slight "pricking" sensation had been appreciated. The eruption had gradually spread to the dorsum of the feet, the legs and trunk, and the patient was aware of fresh lesions from the "pricking" which accompanied their arrival. An examination of the whole surface of the body showed that the only parts free from invasion were the hands, soles of feet, face and scalp; that the most recent lesions, on the chest and back, were skin-coloured soft papules slightly raised above the level of the skin and not larger than a pin's head, but which later attained the size of a small pea.



TO ILLUSTRATE DR. SAVATARD'S CASE OF SCLERODERMIA GUTTATA.

Older lesions showed central depression with a slightly raised edge; while in the oldest of all we get the appearance, as shown in the illustration, of lesions (nowhere more than 1 cm. in diameter)—rounded, dead-white, with minute dilated vessels hedging them around, smooth on the surface and slightly depressed, moveable with the skin, but giving very little appreciable induration. Though there were some hundreds of lesions in all, I could not trace their association with the lines of cleavage of the skin.

Histological examination of one of the most recent papules on the back, even at this early stage, showed in the epidermis obliteration of the interpapillary pegs, slight thickening of the horny layer with thinning of the granular layer and of the rete Malpighii. In the corium the pars reticularis is practically occupied by a mass of collagenous tissue. Elastic tissue is present just beneath the epidermis. There is no evident cellular infiltration about the vessels.

Of recorded cases Petges' (1) is the nearest approach to mine clinically, whilst MacKee and Wise's (2), except for the more normal epidermis in their case, most resembles it histologically.

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(1) PETGES, G.—"Morphœa guttata et White-Spot Disease," *Ann. de Derm. et de Syph.*, 1913, iv, p. 415.

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ROYAL SOCIETY OF MEDICINE.

DERMATOLOGICAL SECTION.

MEETING held on March 17th, 1921, Dr. ARTHUR WHITFIELD, President of the Section, in the Chair.

Dr. E. G. GRAHAM LITTLE showed a case of *Lichen spinulosus with Folliculitis decalvans*. The exhibitor stated that he showed the first instance of this condition two or three years ago. There were shown soon afterwards one by Dr. Dore, not quite so marked, and one reported by Dr. Wallace Beatty. He had not since seen a similar case.

He saw the patient for the first time in December, 1919, when there was no atrophy of the scalp, but she had the lesions of *Lichen spinulosus*, which at the back of the ear were very well marked. There was an exaggerated keratotic mass on the skin behind the ear, which had slowly increased in bulk since he first saw her. She had the other interesting feature of definite atrophic folliculitis of the scalp, and pronounced leucoplakia of the tongue and buccal mucosa. This tongue condition was so like *Lichen planus* that he was not sure that it was not that. Indeed, *Lichen planus* might be the explanation of all three cases. The present case was a very early example of follicular atrophy of the scalp: Beatty's case was a little more extensive, for practically the whole scalp was laid bare.

The suggestion had been made that *Lichen spinulosus* was a juvenile type of *Lichen planus*, a view with which he did not agree. This was not a juvenile case of *Lichen spinulosus*, and *Lichen spinulosus* was not common in adults. Whether these cases ought finally to be grouped as *Lichen planus* remained to be seen; this case was a link which probably suggested that.

Dr. J. H. SEQUEIRA said the patient had come under his care fifteen months ago. He then noted the association of follicular keratosis with leucoplakia of the tongue, and concluded that the case must belong to the *Lichen planus* group. The *Folliculitis decalvans* was a later feature, and the atrophic condition of the scalp was so characteristic that he did not think it could have been present when he had the patient under his observation. By request of the patient's family doctor he had had the blood examined by the Wassermann test. The result was completely negative. *Folliculitis decalvans* was present in one of his patients, a woman of middle age, who had no horny lesions of the hair

follicles elsewhere. In the second case it was associated with follicular keratosis, and was evidently of the type described by Dr. Graham Little, Dr. Wallace Beatty and Dr. Dore. The present case appeared a link between these cases and Lichen planus, and was of great interest.

Dr. S. E. DORE said Dr. Little was fortunate in securing this case, which showed three types of lesion. He had himself shown a case of Folliculitis decalvans and Lichen spinulosus, and also one of Folliculitis decalvans with lesions on the ear, which Dr. Adamson had previously seen and diagnosed as Lichen planus. He thought Dr. Little's suggestion that all the lesions found in in the present case might be variants of Lichen planus an interesting and valuable one.

Dr. S. E. DORE showed a case of *neuro-fibromatosis*. This patient was aged 39 years, and at the age of nine she first noticed a lump in the flexor surface of the forearm. Ten years ago numerous tumours appeared under the skin, principally on the forearms; she now had nineteen on the right arm and twelve on the left arm. They varied in size from that of a pea to a walnut, and projected slightly above the surface so as to alter the contour of the arm; they were slightly lobulated and soft, and there was slight bluish discoloration of the skin over some of them. There was no pain or tenderness, but the hands were slightly œdematous, and when she held the arm up there was numbness of the limb. The tumours appeared to be increasing in both size and number. He regarded the case as one of neuro-fibromatosis, but leio-myoma had also been suggested as a possible diagnosis.

Dr. E. G. GRAHAM LITTLE showed a case of *radium burn*. The patient was a man, aged 50 years. Ten years ago he had an application of radium in the lower part of his back for twenty-four hours, for, it was said, backache. The application resulted in a scar, which was clearly visible along the side of the spinal column. On the upper side of the scar now was a deep ulcer, which developed two or three months ago. The interest of the case lay in the very long period of quiescence since the radium application before the appearance of the ulceration. He understood there was no ulceration immediately following the radium application. He thought it was now malignant.

Dr. J. H. SEQUEIRA said he had seen similar conditions after application of both radium and X-rays. When the more deeply-penetrating heavy doses of X-rays were used late necrosis was a not uncommon sequel. It was difficult to understand why the ulceration should be so long postponed. The only hopeful treatment was complete excision of the ulcer, followed by grafting of the area.

Dr. E. G. GRAHAM LITTLE showed a case of *Dermatitis herpetiformis*. Seven years ago this lady was bitten severely on the finger by a field rat, which hung on and bit a part of it off. She developed rat-bite fever, running a temperature for about a year after the bite, and she had an eruption during that time. The eruption she now showed began a year after, and had been almost continually present for the past six years. She was very susceptible to arsenic; she could not take it in any form, and that made treatment difficult. He had had various reports made on the case. There was pronounced indicanuria, also a high eosinophilia; the former was 23.5 per cent. on March 2nd, but to-day it was only 4 per cent. Eosinophilia had been regarded as a concomitant of *Dermatitis herpetiformis*, but it was a very capricious feature, as shown by the difference in these readings. She had become ill and sleepless, and in a highly nervous state. She had an extensive eruption of vesicles with pigmentation of the skin and intense itching, symptoms which in his opinion placed the case in the category of *Dermatitis herpetiformis*.

Mr. T. H. C. BENIANS demonstrated a method of detecting the presence of catalytic enzymes in infected hairs. The hair was placed on a slide in a drop of hydrogen peroxide 20 volumes, covered with a slip and examined under the microscope. A vigorous effervescence, continuing for fifteen to thirty minutes, occurred when tinea infection was present. The hair itself was inert as regards the presence of catalytic enzymes, but the hair root contained them and must therefore not be included in the preparation.

Similar enzymes were present in most bacteria and might be found in the substrate on which they had been growing. He therefore thought it possible that the method might be of use in detecting some infections of hairs when the causative organisms had themselves disappeared. He did not think the method equalled the ordinary one of direct examination of the cleared hair, but an indirect method might at times be useful when the direct method failed. The method might also be applied to the examination of epithelial scales from the body and shavings of the nails, but not to scales from the scalp on account of the extensive bacterial flora normally present there, especially in adults. Hairs from purulent processes were not usually suitable on account of the catalytic enzymes in the pus-cells.

Dr. MACCORMAC asked whether he understood Mr. Benians to say that the enzyme persisted after the disease had been cured—*i.e.* after the fungus had disappeared.

Mr. BENIANS (in reply) said he had not intended to give the impression suggested by Dr. MacCormac. His meaning was that when the infecting agent had gone, the enzymes, which had been extra-cellular, either from the degeneration of the cell or from the start, were often still found in the substrate, when the organism which formed them had disappeared. He did not mean to imply that it might be expected as a general rule in ringworm.

Dr. W. KNOWSLEY SIBLEY showed a case of *monilithrix*. The patient was a healthy girl, aged 5 years. There was no other known case in the family of hair trouble. At birth the hair was dark brown and normal in appearance. At one month old it all came out and had never grown properly since. The hair of the head had a fair, flaxen, tow-like, bushy appearance, being 1 to 2 in. long on the vertex of the scalp, but only about $\frac{1}{8}$ to $\frac{1}{4}$ in. in length over the occipital, parietal, and margin of the frontal regions. The hairs were very brittle and readily broke off at various lengths with slight friction. The eyebrows, especially the outer parts, were very deficient, and the hairs here presented the same microscopical appearance as those of the head. The eyelashes did not present any of the monilithrix structural appearance. The whole scalp was dry and presented an appearance of Keratosis pilaris, and that condition was also present on the arms and thighs. The teeth were well preserved, rather small, with considerable spaces between all the incisors and canines.

Dr. M. G. HANNAY showed two cases of ? *Pityriasis rubra pilaris*.
CASE 1: The patient was a single woman, aged 21 years, a clerk by occupation. The eruption began in the summer of 1918, with slight redness and scaliness on the forehead, thought at the time to be due to sunburn. Since then the condition had been steadily progressing in the summer and improving or remaining stationary in the winter. She gave the history that she used to freckle severely, but this tendency disappeared almost completely at the same time that the eruption was first noticed. There had been very little itching throughout.

In August, 1920, the eruption was limited to the exposed portions of the face and front of neck and chest, with some papules on the arms. There was a band of normal skin, apparently protected by the coiffure, just below the margin of the scalp, and another band below the chin. On the front of the chest the eruption was limited

to a V-shaped area corresponding exactly to the opening of the modern blouse. These areas were more or less uniformly red and scaly, but at the margins were very numerous discrete papules. On the upper and outer aspects of the arms were a number of isolated acuminate follicular papules, the size of a pin's head, brick-red at the base, capped by a horny plug, and giving a grater-like feel to the finger.

A section of one of the papules from the arm under the microscope showed changes chiefly in and around the hair follicle. There was a hyperkeratosis, the mouth was widened and filled with a horny plug which projected above the surface. In the corium, in the neighbourhood of the follicle, the vessels were slightly dilated, and there was a patchy infiltration of small cells.

CASE 2: The patient was a male, married, aged 55 years. The eruption appeared abruptly on October 27th, 1919. The distribution was at first over the trunk, arms, hands, thighs and legs. From the patient's description it seemed to have resembled a scarlatiniform erythema. It was irritable, and was followed in a few days by peeling, leaving a reddened and scaly surface. The condition gradually progressed.

The patient first came under his care in June, 1920, when there were fairly typical papules on the backs of the phalanges, the wrists and lower abdomen, but nearly the whole of the rest of the trunk and limbs was involved in a rather severe desquamative dermatitis, representing the stage of "homme rouge." Itching was severe, and has been a marked feature throughout.

He was admitted to hospital and quickly improved. The improvement had steadily continued.

At the beginning of this year the eruption was chiefly confined to the trunk, and consisted of small, irregular, flat patches of scaly erythrodermia, some of them isolated, some of them touching or running together in such a manner as to recall the pattern-like eruption of some cases of parapsoriasis.

The case was interesting because of the history of the onset, and the varied phases presented by the eruption.

Dr. HENRY MACCORMAC showed for Dr. R. C. HARKNESS and Dr. R. D. PASSEY a case of ? *basal-cell carcinoma*. The patient stated

that the eruption was first noticed by him about nine months ago as one or two nodules; since then their number had steadily increased. The lesions were confined to the trunk, and consisted of hypodermic tumours on an average the size of a hazel nut. The skin over them was of normal appearance.

The chief interest, however, seemed to lie in the microscopical sections exhibited. The new growth appeared to be made up of spheroidal cells, in some places packed together in an alveolar arrangement, in others showing a central canal in which blood elements were present as in a blood-vessel. In both cases the new growth was limited by a well-marked layer of flattened endothelial (?) cells. From these appearances, and from the position of the growth, it would seem to be more correct to regard the tumour as an endothelioma of the type included under the group named Perrin's sarcoma, rather than as a basal-cell carcinoma.

MR. McDONAGH said he had under observation two years ago a man who presented lesions the replica of those seen in case exhibited. They multiplied rapidly and in a few months the patient died. The conclusion arrived at from a microscopic examination was that the lesions were sarcomata of the nature of endotheliomata.

DR. W. J. O'DONOVAN said that the patient shown appeared to him to be of a type not at all uncommon in the post-mortem room in which no primary growth had been demonstrated during life and in which carcinoma of the stomach or prostate was found at the *sectio cadaveris* although localising symptoms of the primary growth had been entirely absent during life. Clinically, from the subcutaneous nature, the wide yet discrete distribution, and the uniform type of the nodules, he would have diagnosed this as a case of secondary carcinoma of the skin. *Microscopically*, although in one of the two sections the cells were closely packed, with a very imperfect acinar arrangement, yet he would diagnose the growths as secondary carcinomatous deposits. In one section large distended tubules were seen among the solid irregularly shaped processes of polygonal cells; the tubules of growth were lined by one or many layers of high columnar epithelium, sometimes showing a very regular arrangement indeed; many of the tubules were distended by homogeneous secretion. In 1920, of thirteen cases of subcutaneous nodules sent for microscopical examination to the Pathological Institute of the London Hospital the primary focus could be ascertained clinically in eight; in the remaining five cases, their metastatic carcinomatous nature was plainly demonstrable.

DR. W. J. O'DONOVAN showed a case of *Lupus erythematosus (juvenilis)*. The patient was a boy, aged 8 years, who at the age of seven in June, 1920, was noticed to have a rash below his left eye which had been treated as eczema. He appeared for the first time at

Dr. J. H. Sequeira's clinic at the London Hospital a week ago, when the diagnosis of Lupus erythematosus was made at once. The boy's general health was good, there was no history of any infection excepting measles in early childhood; there was no albuminuria, no adenitis, and no chilblains; on both cheeks and on the nose and ears were numerous discrete discoid patches of Lupus erythematosus. The extreme youth of the boy was his reason for showing him at this meeting.

Dr. GRAHAM LITTLE said the condition was very rare in a child. Though he had had charge of skin cases at Shadwell Children's Hospital for twenty-five years he had never before seen a case in a child. That fact was very strongly against the association of Lupus erythematosus and tuberculosis, the latter disease being very common in childhood.

Dr. W. J. O'DONOVAN showed cases of *Carcinoma cutis in anthracene workers*. These will be described in full in a future number.

CURRENT LITERATURE.

INDUSTRIAL DERMATOSES.

INVESTIGATIONS RE THE SO-CALLED "MATCH-ECZEMA" AND ITS CAUSES. JAMES STRANDBERG. (*Acta Dermato-Venereologica*, i, fasc. i, p. 116.)

CASES of match-eczema had been reported in Sweden, Denmark and other countries using Swedish matches since early in 1918. Owing to the world war the Swedish match factories were obliged to use sesquisulphide of phosphorus as a substitute for amorphous phosphorus in the composition applied to the striking surface of match-boxes. A condition agreeing clinically with that of match-eczema was produced experimentally by the local application of sesquisulphide under plaster to the skin of the leg. Workmen handling sesquisulphide in the factories had developed skin-eruptions, but such conditions were not observed in those handling the mixed compound. When introduced *per os* into rabbits the author had obtained no toxic results from this substance. The conclusion is drawn that match-eczema is a toxicodermia caused by sesquisulphide of phosphorus incorporated in the compound on the striking surface of match-boxes, and that bad glue is probably a contributing cause to this skin-affection.

W. J. O.

FISHERMEN'S DISEASES. H. MUIR EVANS. (*Lancet*, 1921, vol. i, p. 517.)

THIS is a summary of an address read before the Norfolk and Norwich Medico-Chirurgical Society by Dr. H. Muir Evans. He particularly describes the effects of the sting of the greater and lesser "weever" upon these workers. These fish are armed with a perfect double-grooved exploring needle on either gill-cover. At the root of these spines is a definite poison-gland, and when

alarmed the fish erects its gill-cover and bends itself round, driving the poisoned spine into any adjacent body, which at once receives some grumous drops of a highly poisonous nature. There are smaller poison organs on each spine of the dorsal fin. The burning pain that ensues is so great that men will attempt to throw themselves overboard, or will hammer the affected part against the bulwarks with a "thole" pin. The pain lasts several hours, and immediate swelling takes place round the wound. There is a certain amount of temporary paralysis of the limb. In a few hours the swelling usually subsides, but may go on to phlegmonous inflammation with local gangrene around the site of injury.

Weever venom contains a neurotoxin, a hæmolysin and a leucotoxin. The hæmolytic constituent of weever poison differs, however, from most snake venoms in that it acts directly on washed red corpuscles—that is to say, without the presence of serum. This statement conflicts with that of certain French writers, who made their experiments with filtered glycerine extracts, whereas Dr. Evans used fresh poison only. He further found that fish-venom markedly paralyses the phagocytic action of the leucocytes. Secondary septic inflammation frequently follows a sting by these fish, which shows how readily the barrier of phagocytosis to pathogenic organisms is broken down.

Fish-venom, like snake-venom, is rapidly destroyed by potassium permanganate, chloride of lime and chloride of gold. The author recommends that all smacks and drifters should be provided with Lauder Brunton's snake-bite lancet, so that a really efficient remedy may be at hand.

In the summer voyages the drift fishermen get their nets full of jelly-fish and the sting frequently causes much burning pain, followed next day by intense itching. The toxin contained in the tentacles of *Actinæ* is thalassine. It is soluble in water and alcohol but not in ether, and produces intense itching. After the summer fishing is ended the nets are repaired. This occupation sometimes brings on so much laceration and sneezing that the men cannot continue it. Dr. Evans believes that these symptoms are caused partly by the dried toxin adhering to the mesh and partly by the dust from the nets. Both of these are shaken into the air in the work of mending.

Boils, occasionally extending to form large suppurating areas, are common on the forearms of fishermen. They are due to the constant rubbing by the edges of the "oilies," the salt water and the dirt incidental to this calling. They are most frequent in winter and autumn.

R. P. W.

"CUTANEOUS LESIONS FROM THE USE OF ARTIFICIAL FERTILIZERS." GIUSEPPE PAVIA. (*Il Lavoro*, September 30th, 1920, xii, No. 5, Pp. 131-134. Abstract by A. HAMILTON in *Journ. Ind. Hyg.*, February, 1921, p. 199.)

"CALCIUM cyanamide has recently been introduced in Italy as a nitrogenous fertilizer. It is extremely dusty and light and easily works through the clothing. When the peasant scatters it by hand it forms a cloud in the air and falls on his sweating skin. Very severe lesions are produced on the mucous membranes of the nose and throat and on the skin, especially the forearms. Another irritating fertilizer is calcium nitrate. The author describes a patient who suffered severely with burning pains on the forearms and knees. Vesicles formed, and then ulcers, which were very slow to heal, and when seen at the end of twenty days it was necessary to send him to a hospital for treatment. According to

popular belief, blondes are very much more sensitive to both compounds than are brunettes. Lesions of calcium cyanamide usually take from twenty-five to forty days to heal."

Koelsch in 1816 investigated the dermatosis due to calcium nitrate. He found the calcium oxide content to equal 56 per cent. To this agent he attributes the trouble. It may also be the one chiefly responsible for the cyanamide dermatosis.

R. P. W.

SYPHILIS.

ACUTE SYPHILITIC NEPHRITIS. JOSEPH A. ELLIOTT and LESTER C. TODD. (*Arch. of Derm. and Syph.*, 1921, iii, No. 5, p. 634.)

A CASE of acute syphilitic nephritis is here reported. According to the authors this complication is infrequent. Its diagnosis depends on (a) the existence of any early syphilis, (b) the high albumin content of the urine with a relatively small number of casts, and (c) therapeutic tests. They consider that arsphenamin is the best drug for treating this condition, and that mercury should not be used until albumin has disappeared from the urine.

J. M. H. M.

CHANCRE OF THE GUM, WITH REPORT OF A CASE. JOSEPH VICTOR KLAUDER. (*Arch. of Derm. and Syph.*, 1921, iii, No. 5, p. 615.)

THE rarity of chancre of the gum has induced the writer to publish this case, in which the lesion occurred on the left side of the upper gum near the centre line in a man, aged 28 years. The lesion was of firm consistence, non-ulcerative and bright red in colour. A dark-ground examination gave positive results. It was associated with a maculo-papular syphilide and generalised adenopathy.

In addition to describing the case, the writer analyses the reports of cases from the literature, the sources of infection, the location, and the type of chancre which may be either erosive or ulcerative in character.

J. M. H. M.

VISCERAL SYPHILIS. UDO J. WILE. (*Arch. of Derm. and Syph.*, 1921, iii, p. 372.)

WITH the exception of syphilis of the rectum, syphilis of the intestine is rare from the clinical standpoint, but in syphilis of the newborn it is frequently recognised. According to the writer the intestine is early involved in association with early catarrhal gastritis, and occurs at the same time as the exanthem of the secondary period. It differs from simple catarrhal enteritis in not yielding to ordinary measures. A late involvement is more common, and, though occasionally recognised at the bedside, is more frequently found at necropsy or at operation. According to the location and the type of lesion, the symptoms are those of ulcer, abdominal tumour, stenosis or intestinal obstruction. The prognosis is unfavourable, as cases usually are long unrecognised, and they lead to ulcerated enteritis and narrowing of the lumen of the intestine.

J. M. H. M.

A STUDY OF THE HISTOLOGIC CHANGES PRODUCED EXPERIMENTALLY IN RABBITS BY ARSPHENAMIN. JOHN A. KOLMER and BALDWIN LUCKE. (*Arch. of Derm. and Syph.*, 1921, iii, p. 483.)

THE conclusion arrived at on the histologic changes produced experimentally in rabbits by arsphenamin and neo-arsphenamin are as follows:

Arsphenamin.—(1) The intravenous injection of lethal doses of acid, non-neutralised solutions of arsphenamin in experimental animals produces widespread and severe vascular injury, characterised by congestion, thrombus formation and hæmorrhage; later cellular degeneration and necrosis take place.

(2) The intravenous injection of single large doses of solutions of disodium arsphenamin (ten times larger than the maximum amount administered to human beings at one time) produce severe vascular and tissue alterations, particularly in the liver, kidney, suprarenals and spleen.

(3) The intravenous injections of multiple therapeutic doses of solutions of disodium arsphenamin corresponding to doses of 0.6 gm. per 60 kilos. of body-weight produce inconspicuous tissue alterations that do not appear to be sufficiently pronounced to interfere with the functions of the organs.

(4) Detailed descriptions of the histologic changes found in the brain and meninges, heart, lungs, liver, kidneys, suprarenals and spleen are given.

(5) These changes were induced by arsphenamin prepared by several different laboratories.

(6) These histopathologic changes probably bear an important relation to arsphenamin reactions and to methods of arsphenamin therapy.

Neo-arsphenamin.—(1) The intravenous injection of single massive and multiple smaller doses of neo-arsphenamin into rats and rabbits produces vascular injury, cellular degenerations and necrosis similar to those produced by solutions of disodium arsphenamin. The histologic changes found in the cerebrum, cerebellum, brain, meninges, heart, lungs, liver, kidneys, suprarenals and spleen are described.

(2) The tissue changes produced by neo-arsphenamin are less severe than those produced by solutions of disodium arsphenamin when considered in relation to dosage per kilo. of body-weight.

(3) The changes described were produced in equal degree and with equal frequency by neo-arsphenamin prepared by different laboratories.

J. M. H. M.

A STUDY OF THE HISTOLOGIC CHANGES PRODUCED EXPERIMENTALLY IN RABBITS BY MERCURIAL COMPOUNDS.

JOHN A. KOLMER and BALDWIN LUCKE. (*Arch. of Derm. and Syph.*, 1921, iii, p. 531.)

THESE experiments show (1) that the administration to rabbits of the different soluble and insoluble mercurial compounds commonly employed in the treatment of syphilis, by intramuscular and intravenous injection, inunction and oral administration, and in amounts analogous to the maximum doses given to human beings, resulted in the production of tissue changes in all organs examined, namely, the brain, heart, lungs, spleen, liver and kidneys; (2) that the most conspicuous changes were found in the brain in the nature of perivascular round-cell infiltrations, and in the kidneys as tubular and capsular glomerulonephroses of varying degrees of severity. Details of the histologic changes in these and the other organs included in this study are described; and (3) that the degree of tissue injury caused by the different preparations of mercury appears to bear a direct relation to the actual amounts of pure mercury absorbed irrespective of the kind of preparation and route of administration.

J. M. H. M.

EXPERIMENTAL PRODUCTION OF CLINICAL TYPES OF SYPHILIS IN THE RABBIT. W. H. BROWN and L. PEARCE. (*Arch. of Derm. and Syph.*, 1921, iii, p. 254.)

THE following is a summary of the results of the experiments: "It was noted that distinctly different types of disease were frequently produced by inoculations made with a given strain of *Spirochæta pallida*; it appeared also that there was an appreciable connection between the experimental conditions employed and the type of disease which occurred.

"Since it had been found possible to convert a disease which is usually localised into a generalised disease by diminishing or suppressing the primary reaction, it appeared that by modifying the reaction in different ways one might produce types of disease which would conform to alterations in the defensive mechanism. Experiments carried out on a large series of animals showed that such was the case. By various experimental procedures different types of infection were produced, and in this way it was found that there was a definite sequence of tissue involvement or of tissue reactions which made it possible to produce infection, or to confer protection on a given group of tissues according to the nature of the means employed.

"From the manner in which the infection responded to modifications of the defensive reaction, the conclusion was drawn that a wide variation in the clinical type of the disease might be traceable to this one group of causes. This, of course, does not eliminate the possibility that variation in the biologic properties of the infecting organisms may contribute to further variations in the type of the disease."

J. M. H. M.

THE SACHS-GEORGI REACTION FOR SYPHILIS. S. A. LEVINSON and W. F. PETERSEN. (*Arch. of Derm. and Syph.*, 1921, iii, p. 286.)

THE Sachs-Georgi test is here carefully described and compared with the Wassermann reaction. The technique is simple, only one biological reagent being required (antigen) instead of the four used in the Wassermann test (antigen, amboceptor, complement and red blood-cells). This simplicity adds to the uniformity of the results. The test has been found frequently to be positive in syphilitic cases when the Wassermann test was negative. An examination of 1042 serums and cerebro-spinal fluids by the Wassermann and Sachs-Georgi reactions demonstrated a parallelism of the two reactions in 92 per cent. In sixty-two cases in which the Wassermann test was negative whilst the Sachs-Georgi test was positive or doubtful, the clinical history or examination revealed evidence of syphilis in 58 per cent.

J. M. H. M.

INFLAMMATIONS, ETC.

RHUS DERMATITIS. JAMES B. MCNAIR. (*Arch. of Derm. and Syph.*, 1921, iii, p. 383.)

IN this interesting paper the pathology of the dermatitis caused by the toxicodendrol of *Rhus dermatitis* and the lobinol of *Rhus diversiloba*, which are the resinous saps of the plants, and the avenues of infection are described, also the pathological changes which result. Experiments have shown that a period of latency varying from a few hours to several days may occur between the

exposure and the dermatitis. Certain general symptoms are associated with the local lesion, such as diarrhoea, constipation occasionally, albuminuria, insomnia and adenitis of the neighbouring glands. J. M. H. M.

CREeping ERUPTION. JOSEPH VICTOR KLAUDER and SIGMUND S. GREENBAUM. (*Arch. of Derm. and Syph.*, 1921, iii, p. 377.)

IN this excellently illustrated paper a case of creeping eruption is described in a girl, aged 6 years, in which the skin-affection first appeared as a small vesicle on the foot, and this extended in the typical linear fashion. Part of the lesions were composed of linear vesicles. Pictures of the histo-pathology accompany the article. The condition is usually due to the larva of a horsefly (*Gastrophilus hemorrhoidalis*), and in this case was probably picked up by the child walking barefooted in the sand. J. M. H. M.

THE RÔLE OF THE ENDOCRINE GLANDS IN THE ÆTIOLOGY AND TREATMENT OF ACNE. LESTER HOLLANDER. (*Arch. of Derm. and Syph.*, 1921, iii, No. 5, p. 593.)

THE writer distinguishes two types of patients with acne, namely—(1) the thin emaciated anæmic type, and (2) the stouter, full-blooded or plethoric type. In the first, or anæmic type, he considers that there is a thyroid toxicosis with an increase in metabolism as a whole, and that the thyroid gland activity is increased in a compensatory measure to cope with the endocrine imbalance produced by the gonad activity. In such cases he recommends that the patients be given suprarenal gland substance, commencing with 5 gr. three times a day, and increased later to 5 gr. four times a day, the treatment being continued for a period of two months and combined with suitable local treatment. In the second, or plethoric type, he considers that there is a lowered thyroid gland activity, and in consequence administers thyroid gland substance, a quarter of a grain three times a day. J. M. H. M.

GENERAL.

DERMATOLOGIC ETYMOLOGY. GEORGE HENRY FOX. (*Arch. of Derm. and Syph.*, 1921, iii, p. 404.)

IN this interesting communication the author gives the derivation of the terms commonly employed in dermatitis, and his article will be of great value to writers on the subject. J. M. H. M.

REVIEW.

PRÉCIS-ATLAS DE PRATIQUE DERMATOLOGIQUE.*

ANOTHER volume from the pen of Dr. Louis Brocq will command the attention of all dermatologists in this country as well as abroad. The *raison d'être* of

* *Précis-Atlas de Pratique Dermatologique.* By LOUIS BROCQ. With the collaboration of Dr. SOLTAS and M. SCHALLER. Paris: Librairie Octave Doin, 1921.

the present work is to provide a manual less voluminous than the *Traité Elementaire*, published in 1907, and more complete than the *Consultations Dermatologiques* of 1911. Chapters and tables of differential diagnosis have been omitted and the practitioner will find all he requires without being overburdened with purely theoretical matter. For instance, contentious doctrines such as those of focal infection and sensitization of the skin are passed over, whereas recent work on the cutaneous mycoses and the treatment of syphilis has been added. Similarly, the author restricts himself to one of the graphic representations of cutaneous reactions which have become familiar to his readers, and devotes considerable attention to the diagnosis of dermatoses by means of "grattage." In other words the work is eminently practical, and in spite of a wealth of detail running into 1260 pages, there is no superfluous matter, and every inducement is given to the attainment of a sound and extensive knowledge of cutaneous diseases and their treatment to those who study it.

Turning to the section on eczema we note that the author adheres to his well-known view that there are certain cases in which energetic treatment may do harm by determining the appearance of visceral congestions, and although this heresy may not find agreement amongst modern dermatologists, it is deserving of attention when it emanates from a clinician of such great experience as the author. With this exception the opinions expressed do not differ widely from those of the English school.

The book has the usual paper binding, never durable in a volume of this size, and the quality of the paper is inferior. There are a large number of photographs at the end of the book, constituting an atlas, taken from the author's collection without retouching, and arranged in alphabetical order. In the preparation of these he had the collaboration of the late Dr. Soltas and of M. Schaller, and although not all up to the same level of excellence, they form a valuable addition to the text.

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THE BRITISH JOURNAL
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A POSSIBLE EXPLANATION OF THE INCREASED
INCIDENCE AND EARLY ONSET OF NEURO-
SYPHILIS.

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AND

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(Continued from p. 264.)

POSSIBLE EXPLANATION.

Possible explanations of the increased incidence and early occurrence of neuro-syphilides at the present time may be summarised as follows :

(1) That it is due to direct arsenical intoxication analogous to the optic atrophy which follows the administration of Fowler's solution.

(2) That it is due to transient or permanent anatomical damage directly caused by the arsenic.

(3) That it is an amino-group intoxication.

(4) That it is a purely syphilitic process (McIntosh and Fildes) (14).

(5) That it is due to sudden sterilisation of the general systemic circulation, with resulting paucity of antibody supply to the cerebro-spinal axis. The parasites in the general circulation are killed off,

and the stimulus for antibody production is thereby removed; this stimulus is not replaced by arsenobenzene. The parasites which have invaded the central nervous system are not killed, but are left free from antibody molestation to attack the harbouring tissues at will (McDonagh) (15).

(6) That it is due to a combination of a purely syphilitic process and an arsenical intoxication accelerated by the traumatic element of post-war neuroses.

The first three explanations are untenable, because too little arsenobenzene reaches the intra-theal circulation to do serious damage to a healthy central nervous system. That it is a purely syphilitic process is less than half the truth—such a process was in full swing long ere the arsenobenzene days, when neuro-syphilis was a much less frequent occurrence. The explanation offered by McDonagh is more than half the truth, but it excludes the possibility of arsenical damage, which cannot be ignored. It seems to us that the most logical explanation is a combination of No. 5 and No. 6, as will be seen from the following discussion.

We have seen, then, that the early symptoms of syphilis tend to disappear with or without treatment. Treatment aids their disappearance by interfering with the parasite's means of livelihood, and aims at stimulating the host's resistance and his powers of producing antibody. The natural process of antibody production is carried on automatically so long as the organism is present in the host to act as a direct stimulus. Should the great majority of organisms be eliminated suddenly the supply of antibody will cease. Thus arsenobenzene defeats its own ends by hindering instead of furthering the natural supply of antibodies, as it does not itself stimulate their production. Were it a "*therapia sterilisans magna*" this objection would not arise. In addition, also, we must not lose sight of the possible damage arsenobenzene may do *per se*. It seems highly probable that the cerebro-spinal axis suffers directly or indirectly from the injury of its capillaries as a sequel of the vascular damage by the arsenic, combined with the action of arsenobenzene in devitalising the parasites and healing the local lesions. In this way the production of natural and more lasting antibodies of high specificity is limited.

In untreated syphilis the organism is present over very long periods to stimulate the production of antibodies. During this time

the cerebro-spinal axis is also producing a little, but acquiring much more from the supply circulating in the general system. So, also, when treated with mercury the nervous system has a large antibody reservoir on which to draw constantly for supplies.

When syphilis is treated with a few successive colossal doses of arsenobenzene the organisms in the general systemic circulation are very quickly killed off. Those which have sought refuge in fibrous tissue and perivascular spaces, however, are not. The amount of arsenobenzene which reaches the cerebro-spinal axis is enough to damage the tissues, but in most cases not sufficient to kill off the parasites, which are safely entrenched. The arsenic which appears in the cerebro-spinal fluid is probably an excreted excess. The result is that the general systemic circulation may be almost or completely sterilised quickly and suddenly, but the intra-theal area is not. The supply of antibodies in the tissues is arrested, therefore the main supply to the intra-theal circulation is cut off. The result is that the organism in the central nervous system has little to fear except the meagre antibody supply locally produced, and therefore may progress and give rise to serious symptoms in a cerebro-spinal axis already damaged by arsenic.

It is now easy to deduce what happens under various schemes of treatment. In the case of mercury, the removal of Nature's stimulus is slow and never complete, and the nervous system is drawing a useful supply of antibodies over a long period. If the mercurial treatment is too severe the antibody supply will be permanently cut off, and the likelihood of a nervous lesion supervening becomes very real. We are of opinion that the treated case is much more likely to develop a degenerative affection than the untreated case—as far, at least, as mercury, imperfect mercury and arsenobenzene, and arsenobenzene medication are concerned.

In the same way, when treated with several successive big doses of arsenobenzene quick sterilisation takes place. If followed for two or three years by continuous *small* doses of arsenobenzene and mercury the nervous system may be successfully sterilised as well. That is to say, these drugs may so control organismal activity and maintain or replace the antibody supply that no symptoms supervene. On the other hand, it seems possible that with the first sudden check on antibody production the organism may have opportunity to make its

position so secure and unassailable, that the mercury and arseno-benzene available intrathecally cannot prevent the appearance of sudden, severe, early symptoms. These one would expect to be meningeal in character, and this may explain the group of phenomena which we are accustomed to see in this type of case.

Many other factors must be taken into consideration with regard to the early incidence of nervous syphilis. It can be stated with confidence that no two cases of syphilis are exactly alike. There are all types and forms of primary lesions seen at identically the same sites of inoculation, all shades of type and severity of the generalisation stage, tendency to spontaneous cure and tendency to quickly succeeding relapses, severe general reaction and absolute absence of reaction, tendency to cerebro-spinal involvement and apparent immunity. The most important factors which determine these various presentations are these: (1) The patient's resistance, (2) the natural protective power of the central nervous system, (3) the type of infection, (4) the stage at which treatment is inaugurated, and (5) the type of treatment undertaken. Let us consider these questions *seriatim*.

(1) *The patient's resistance.*—It seems that certain individuals possess an inherited partial immunity to the spirochaete. Should such an individual become infected the primary and secondary stages are extremely mild or entirely absent. It is nevertheless the fact that these cases show the most marked tendency to subsequent degenerative nerve-lesions. Possibly the response is so weak, and the demand for and the production of antibodies so small, that the central nervous system is laid bare to subsequent attack the moment any traumatic element appears, however slight it may be. In patients who have no immunity whatever and very little powers of resistance the local response is *nil*. The primary and secondary manifestations do not appear, and the parasite reaches the cerebro-spinal axis before any antibody mobilisation has taken place. It proceeds to attack the nerve-tissue proper, and symptoms appear immediately the anatomical damage is sufficiently gross to cause them.

(2) *The natural protective power of the central nervous system.*—The faculty which the central nervous system has of producing autogenous antibody must play an important part in the defensive

campaign. Should it react efficiently to the organismal attack, and not be too dependent on the antibody supply available from the systemic circulation, it will be much less liable to succumb to parasitic invasion. We look upon this intra-thecal combat as possibly proceeding vigorously, while the disease in the systemic portion is latent. It is obvious, then, that if a positive Wassermann reaction in the cerebro-spinal fluid, together with such abnormalities as a positive Nonné-Apelt test, a lymphocytosis, and so on, are indications of the reaction of the nervous system to the parasitic attack, the prognosis in such cases is infinitely better than if the cerebro-spinal fluid were perfectly normal without any evidence of such reaction.

In this connection one might recall the case previously cited, where tabes dorsalis has been precipitated by the sudden institution of arseno-benzene treatment in a healthy individual with positive changes in his cerebro-spinal fluid. The provocative dose apparently broke down his defence and allowed the invader to proceed with his attack. It is irrational, therefore, to treat cases who give persistently positive serum and cerebro-spinal Wassermann reactions during the latent stage of the disease, particularly if their previous treatment has been adequate.

Spontaneous cure is a recognised though rare phenomenon, and must depend on a particularly rich antibody supply in the intra-thecal as well as the systemic circulation. Where the attack on the nervous system has been particularly virulent in the early generalisation stage the intra-thecal antibody production will have been equally increased. Spontaneous cure, therefore, and subsequent immunity of the nervous system is most likely to follow in such cases. This we believe is so, and the prognosis in cases which present symptoms detailed in the previous meningeal groups is accordingly better as regards later nervous involvement than in those where the nervous system has shown no response to the spirochætal assault.

Let us revert to our previous statement that tertiary syphilis seemed *per se* to protect the individual against nervous system involvement. A possible explanation of this is that the extent and severity of these tertiary lesions so excite Nature's immunity mechanism that there is an unusual production of antibodies—enough almost to arrest the disease. The facts observed in cases which have relapsed after treatment by modern methods would seem to support

this theory—that is, the treatment heals the local lesions and deprives Nature of the excitant of antibodies. Antibody production is thus reduced to a minimum by the more spectacular arsenobenzene, whose effects are less lasting than those of Nature's antibodies. The uncured disease may make great progress in a short time before other symptoms appear, and when these do show cerebro-spinal involvement is often in evidence.

The obvious remedy—until we have a more lasting agent than arsenobenzene—is to reduce the dosage and inject very much oftener and over a much longer period. In this way the disease will be dealt with efficiently and with less risk of damaging the tissues.

(3) *The type of infection.*—This is the most difficult aspect of the subject. As a rule it is dismissed in a sentence vaguely referring to "the virulence of the organism." Even when one allows for such factors as the resistance of the individual and the virulence of the organism, it seems almost inconceivable that one type of parasite could be responsible for the multitude of varying primary lesions one meets and the thousand and one different clinical pictures of their after-effects. A blood-infection may cause syphilis without the appearance of any primary lesion; a finger pricked with a contaminated needle may show its first symptom as a typical roseola ("syphilis d'emblee"); a spirochaetal abrasion may come and go without any secondary or later manifestations, while another may lead to a definite posterior column degeneration within a few months. The question, then, of various types and strains of parasite must be faced, and what is more probable, the question of a life-cycle of the *Spirochaeta pallidum*. McDonagh's theory (16) of the life-cycle of his *Leucocytozoon syphilidis* is a very beautiful one, and explains many of the phenomena which we have just discussed in a manner quite incomparable with the more generally accepted narrow-visioned theories. There is much evidence to show that the spirochaete represents only one phase of the life-cycle of the parasite. The work of Balfour and O'Farrell, MacLennan, E. H. Ross, Mott and Leishmann support this view. Noguchi (17) has found granules in his pure cultures of *S. pallidum*, and these have been observed independently by several other workers. Ronth (18) believes that these granules are definite infective agents and are capable of eventually becoming mature spirochaetes. Mott (19), again, believes that the spirochaete

undergoes certain modifications, so that there is a biological difference between the spirochaetes of general paralysis and primary syphilis. He regards a continued supply of antibody as being capable of modifying the virulence of the parasite.

(4) *The stage at which treatment is inaugurated.*—The point of importance with regard to modern treatment by chemiotherapeutic agents is that treatment should be carried out vigorously long before the stage of generalisation is begun. Only in this way can we hope for successful sterilisation of the host. The influence of the interval allowed to elapse before treatment is started on the incidence and onset of nervous symptoms is clear from the foregoing discussion. No treatment which is begun after the stage of generalisation has commenced can ever absolutely guarantee sterilisation of the host. The routine examination of the spinal fluid in all cases as advocated by Forsyth, Klander, Lévy-Bing, McDonagh and others is of value only when correctly interpreted. If we find a normal spinal fluid we cannot guarantee definite protection; and if we find a pathological fluid it can only tell us definitely what we have already taken for granted, namely, that the intra-the cal combat has been raging coincident with the generalisation of the organism.

(5) *The type of treatment undertaken.*—Sufficient has already been said under this heading to make the position clear.

TREATMENT.

The modern method of working for a negative Wassermann reaction is the secret of failure. The Wassermann is of value qualitatively and quantitatively, but it has its limitations. A positive qualitatively indicates a state of the serum found in certain diseases of which syphilis is the commonest in Europe; a negative usually, but not always, negatives these diseases. Quantitatively the test is sometimes useful in estimating the progress towards cure, but when a negative result is got progress must still go on if cure is to be obtained, and the test can no longer indicate the results of treatment. There is no doubt that the non-syphilitic reaction is well on the negative side of the first "negative" result. If treatment ceases as soon as a positive serum becomes negative a relapse is almost certain to occur.

It is much more important to treat the case as an individual and to keep his future in mind. The reactions of the serum and spinal

fluid may indicate implication or powers of resistance and protection, and it is impossible to tell which. The clinical picture and history are much more valuable guides. Every case should be treated individually on its merits, and the wholesale administration of colossal doses of arsenobenzene given rigidly and blindly until the serum reaction is negative should be abandoned. In the same way a persistent positive Wassermann reaction during the latent stage should not be treated as a safe signal for further arsenobenzene administration. In such cases it usually represents the continued natural production of antibodies.

In the early stage every effort should be made to sterilise the host before the stage of generalisation has commenced. Vigorous intravenous medication should therefore be carried out. If combined with intramine the maximum amount of the element will be taken up and a maximum amount of protection for the cerebro-spinal axis will be secured. After the generalisation stage is in full swing the aim should be to work for a slow, steady and gradual sterilisation. *Small* doses of arsenobenzene at short intervals extended over a very long period will prove the best means to attain this. The nervous system will require all the antibody it can possibly secure, and this circumstance will be defeated if sterilisation is sudden and rapid. Moreover, large intravenous doses of arsenobenzene are liable to damage the central nervous system in addition. Intramuscular arsenobenzene, combined with intramine and mercury, is then the best form of treatment. This can be carried out without pain or discomfort by the use of sulfarsenol, as has been shown by Lévy-Bing and Gerbay (20), Yernaux and Bernard (21), Doble (22), and many others.

CONCLUSIONS.

(1) The responsibilities for the increasing incidence of early neuro-syphilis rest with :

- (a) The tendency to treat primary syphilities *en masse*.
- (b) The method of working to a mechanical time-table.
- (c) The blindfold method of working for a serological rather than a clinical cure.
- (d) Failure to interpret pathological findings in the light of the clinical picture.

(e) Losing sight of the importance of the central nervous system as regards the patient's future.

(f) The tendency to under-treat patients.

(2) Modern early treatment fails in protecting the central nervous system by rapidly sterilising the general systemic system, and thus depriving the cerebro-spinal axis of its antibody supply. In addition, the large doses of arsenobenzene employed tend to damage the central nervous system.

(3) The possible damage to the cerebro-spinal axis resulting from the strain and anxiety of war must be kept in mind as a predisposing factor.

(4) The nervous system is invaded coincident with the generalisation of the organism.

(5) Nervous system involvement may be symptomatic or asymptomatic. In the absence of clinical signs a normal spinal fluid may indicate the successful overcoming of the organism by the nervous system or the failure of the nervous system to react. It may also suggest that the general systemic circulation has been successfully sterilised before the cerebro-spinal axis was invaded. A pathologic spinal fluid may indicate damage or protective reaction. In the absence of symptoms we cannot accurately interpret the finding.

(6) For the security of the patient the early invasion of the cerebro-spinal axis should be taken for granted.

(7) The occurrence of neuro-syphilis is influenced by (a) the patient's powers of resistance, (b) the natural resistance of the central nervous system and its inherent capacity for producing antibody, (c) the stage at which treatment is inaugurated, (d) the type of treatment employed, (e) the period over which treatment is carried out, and (f) the type of parasite responsible for the infection. In this connection the question of a life-cycle of the *Spirochæta pallidum* must be considered.

(8) Great importance is attached to the value of clinical acumen, observation and judgment. These should be co-related with careful interpretation of pathological findings.

(9) The importance of treating each particular case on its merits instead of treating him as one of a series is emphasised.

(10) Treatment should aim at conserving sufficient antibody for the requirements and protection of the cerebro-spinal axis, instead of

defeating one's object by rapid sterilization of the general systemic system, thereby leaving the nervous system to look after itself—a thing for which it is ill-equipped.

(11) Antibody supply should be conserved over a period of years. The value of intramine as a protection for the nervous tissues warrants its inclusion in any scheme of treatment.

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CARCINOMA CUTIS IN AN ANTHRACENE FACTORY.

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THE East End of London offers an unrivalled field for the study of industrial diseases. On the Thames side, and along the lower reaches of the Lea valley are concentrated a multitude of varying industries operating often under unfavourable hygienic conditions, and, owing to the readiness of the population to seek hospital advice, it is a noteworthy event when a new or apparently new industrial ætiological factor is brought under our notice.

Tar carcinomata have figured in surgical and dermatological writings since Percival Pott wrote his monograph in 1775 on chimney sweep's cancer. For the purpose of my last paper on "Epitheliomatous Ulceration in Tar Workers," *British Journal of Dermatology*, 1920, the ætiology of the cases there reported was gone into carefully, and tar, pitch and creosote were the industrial factors then elicited; this covered the London Hospital cases back to 1908. Three cases, however, having a factor new to us, viz. anthracene, have recently come to our clinic. It might be suggested that in former years the accurate industrial exposure had been overlooked, but all these cases occurred on only one plant, and personal investigation at the factory and inquiry of the management, workers and Home Office officials showed that no known similar cases could be disinterred from memory or from any factory records.

The experimental production of tar carcinomata has been attempted fruitlessly by Hanau (1) (1889) and by many others since. The successful production of real undoubted carcinomata by tar applications has been recorded by Yamagiwa and Ichikawa (2), 1915, of Japan. Tsutsui (3) in 1918 reported the production of hyperkeratosis, papillomatous growth and carcinoma in mice. The most recent experimental work has been published by J. Fiebiger and F. Bang, in a monograph issued in Copenhagen in English this year, 1921(4). Carcinomata with or without metastases were produced in 24 out of 26 mice who survived a first painting with tar for at least half a year. The growths were always squamous and horny carcinomata, and were produced by touching the mice between the scapulæ every second or third day with a

pencil of wood dipped in tar. The tar employed was subjected to most careful chemical analysis in the Pharmacological Institute of the University of Copenhagen, and contained about 0.0003 per cent. of arsenic. This is contrary to the pitch analysis of Bayet and Slosse(5), but agrees with tests in the Lister Institute(6), and this is of importance in limiting the field of ætiological research to tar and its derivatives only.

The occurrence, then, of a small outbreak of cutaneous cancer in an industry devoted to the manipulation and purification of one product of tar distillation is of interest in narrowing perhaps still further the field of experimental work.

Prof. Fiebiger(7), in his preliminary review mentions creosote and carbolic acid, arsenic, anthracene and aniline as dangerous agents, but makes no reference to any illustrative cases in the clinical literature of industrial cancer.

MacLeod(8) mentions anthracene, but with only a general reference as to its known or surmised potentialities.

Mr. Herbert Lush, in his Report to the Home Office on the Manufacture of Patent Fuel(9), 1913, p. 6, refers to the specially irritating effects of pitch containing an exceptional percentage of anthracene, but no special inquiry seems yet to have been made in the anthracene industry itself as to whether the handling of this substance, pure or impure, is attended with any special industrial hazard.

CASE 1.—On March 17th, 1921, the patient, I. Y—, aged 62 years, came to the Skin-Department of the London Hospital, complaining of an ulcer on his hand. He denied venereal disease, and had only been laid up once—by a crop of boils on the back of his neck three years ago. For the last five years he has worked in the yard of a riverside alizarine factory in the East End of London. In the factory yard he unloaded boxes and sacks of anthracene “cake,” a green, moist, amorphous powder, containing 40 per cent. of pure anthracene and smelling strongly of creosote. For twenty-five previous years I. Y— had worked as a pitch-breaker, using a pick and shovel to break up beds of pitch and load it into barges, and at this work he had suffered from conjunctivitis, due to pitch dust. The patient is a well-covered, sturdy, grey-haired man; his face is deeply bronzed, his forearms are brown, his covered skin is white. On the forearms are many small, pink telangiectases, and many disseminated,

minute, grey, hard, follicular keratoses. On the back of his right wrist is an irregularly circular, raised flat tumour, with rounded overhanging edges and an ulcerated granular, slightly scabbed surface. In its highest part it is 0.5 cm. above the skin, and it is not adherent to the deeper structures. It is painless and not tender. The growth began six months ago as "a small wart with a black top," and the patient attributes its steady growth to knocking the top off against a tub. There are no other warts on his body, and the regional epitrochlear



FIG. 1.—Case 1: I. Y—, aged 62 years. Carcinoma cutis in an anthracene worker; exposure 5 years.

and axillary lymph-glands are not enlarged. *Microscopically* the lesion is a squamous and horny-celled carcinoma. The growth was removed by Mr. T. H. Openshaw on April 12th, 1921.

CASE 2.—On November 25th, 1920, C. B—, aged 53 years, came to the London Hospital with a lump on his face. He has worked for thirty years at the factory where the other cases were employed. He has never worked in tar, creosote or pitch, and his work, he says, has been constant; he has worked at the grinding of anthracene cake, has looked after the centrifuges in which it was whizzed, and has helped at loading in the yard. He has always had good health

(Wassermann reaction negative: P. F., London Hospital, December 29th, 1920).

Three months ago he noticed a pimple on the right side of his face, which has rapidly grown in size. The patient is a well-built, slightly grey man, with a dark-brown complexion and forearms. There are no other warts or keratoses and no enlarged glands. On the middle of the right cheek is a button-like raised growth the size of a half-penny, with a hard consistence, cutting like cartilage, a rolled edge,



FIG. 2.—Case 2: C. B—, aged 53 years; exposure 30 years.

and a very slightly ulcerated and roughened surface (a depressed scar on the right temple was due to an old injury).

Microscopically the growth was a squamous and horny carcinoma. The growth disappeared entirely after treatment with radium, and when seen seven months later there was no sign of recurrence in the scar.

CASE 3.—On November 16th, 1920, S. B—, aged 59 years, came to the London Hospital with an ulcer on his right wrist. He was laid up with "rhenmatic fever" when twenty-three years old, otherwise he has had good health. He has worked in the same

factory as the other patients for thirty-two years, and for the last twenty years has been a foreman in the anthracene purifying plant. The patient's face and forearms are dark—swarthy—and on his forearms are many small keratoses and small black acne spots. There is a warty nodule 1 mm. in diameter on his right ear. Immediately above the right wrist-joint on the radial aspect is a rounded, irregularly shaped ulcer 3 in. by 2 in. in diameter with a hard, rolled, raised border. He has noticed this for the past four years; it has enlarged more rapidly the last six months, and has bled after injuries received at work. The growth was not painful, not tender, not adherent deeply; there were no enlarged regional glands. Mr. Warren, at Dr. Sequeira's request, removed the growth

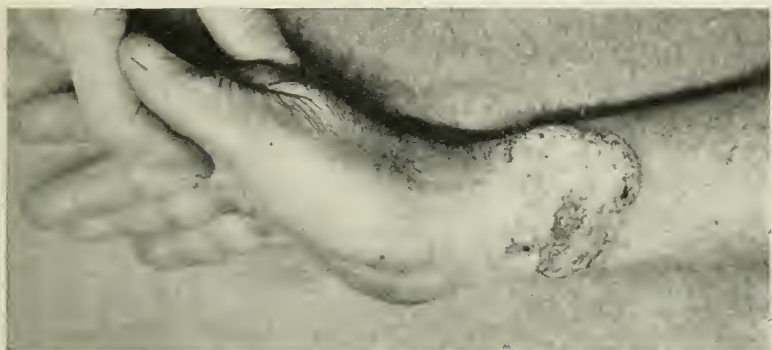


FIG. 3.—Case 3: S. B.—, aged 59 years; exposure 32 years.

and skin-grafted its base on December 30th, 1920. *Microscopically* it also proved to be a squamous and horny-celled carcinoma.

THE INDUSTRIAL ASPECT.

Anthracene ($C_{14}H_{10}$) represented graphically by three benzene rings, is the starting product of the alizarine dye industry; it comes over in the distillation of coal-tar between $230^{\circ}C.$ and $270^{\circ}C.$ After standing crystals of anthracene deposit, and this cake is sent by the tar distillers to the factory where these three patients worked. The cake is unloaded by hand and broken down; it is exposed to steam and washed with solvent naphtha mixed with pyridene bases; the product is then distilled with potash and lime, washed with solvent naphtha, and is finally sublimed, appearing then as odourless

pure white crystals, intensely irritating if placed on the tongue. Owing to the great courtesy of the management I was able to see all the men at work on the plant. The most noteworthy feature was the deep staining of the hands and faces of the workers dealing with the crude anthracene, while those who were responsible for the sublimation process and final packing were free from any lesions whatever; their exposed skin was not pigmented brown.

The yard-men handling the amorphous cake in boxes and sacks varied from twenty-nine to fifty-seven years of age. Their hands were deep brown, sometimes almost green in their coloration; their faces and necks were very swarthy. There was acne of their neck and forearms, and minute keratoses on their forearms, most marked

on the ulnar border. One man, aged 25 years, and employed here for five years, showed plugged black follicles on his forearms, copious acne of his face and neck with many small white sunken round scars. Another, aged 37 years, with only two years' employment, had developed a very brown exposed skin with acne of his face and forearms and minute keratoses of the forearms. A man, aged 57 years, with only three years' employment, showed acne, keratoses and fine telangiectases on his forearms.

The men operating the stills were also dark, and showed similar but slighter lesions developed in four and five years' employment on this work. Generally the men consider this a healthy employment; it is not laborious, the work is very open to the air on the Thames side, and long continuity of employment is a feature of the industry. None could recollect any previous cases needing hospital treatment for any lesion connected with the industry. Three cases

of carcinoma occurring quickly on a plant employing about twenty-five men is a heavy incidence of a grave industrial disease.

SUMMARY.

(1) Elderly anthracene workers are liable to carcinomata of the skin similar to those found in sweeps, tar, creosote and paraffin workers.

(2) These growths are squamous and horny-celled carcinomata; metastases have not been found.

(3) Unlike tar cases a multiplicity of growths in any one patient was not met with. Four years was the longest and three months the shortest duration of the growths.

(4) Minor lesions, Acne, keratoses, telangiectases and pigmentation are common features in workers on the plant.

(5) A plant may run for thirty-five years before a carcinoma case develops.

(6) The handling of purified anthracene does not appear to have the industrial hazard attributed to the handling of anthracene cake.

I am deeply indebted to Dr. J. H. Sequiera for permission to publish these cases: At the Royal Society of Medicine (10), March 17th, 1921, he pointed out that this outcrop of cases was not associated with any change in the process of manufacture.

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ROYAL SOCIETY OF MEDICINE.

DERMATOLOGICAL SECTION.

MEETING held on April 21st, 1921, Dr. ARTHUR WHITFIELD, President of the Section, in the Chair.

Dr. J. H. SEQUEIRA showed a case of *Lupus erythematosus with sclerodermia*. The patient, an unmarried lady, aged 35 years, was born in South Africa. She had "gastric" trouble in childhood, but had had no serious illness except measles, although she was "never strong." In 1906 she suffered from bilateral blepharitis. In 1911 she came to this country for advice, as a persistent red infiltration had developed along the edges of both lower lids. A little later the eruption spread across the root of the nose. He treated the eyelids with radium and the eruption cleared up, leaving a soft scar with slight ectropion. The lesion at the root of the nose was treated by the Finsen light and ultimately cleared up. The patient then went home to South Africa.

In 1914 she returned to England for further treatment and again went home. In 1917 the fingers of both hands and the ankles became swollen in the spring and the fingers have become progressively stiffer ever since. In 1919 she came again to this country and the appendix and an ovarian cyst were removed.

The fingers and thumbs were purplish, swollen and stiff, the skin was immobile and could not be pinched up. The right hand was worse than the left. The left hand could be clenched except that the first finger could not be made to reach the palm. On the right hand none of the fingers could be made to touch the palm. Both palms were supple and moist, the wrists were free. The patient felt the cold intensely, and blisters continually developed on the tips of the fingers.

There was no alteration of sensation, tactile or thermal. Radiographs showed atrophy of the terminal phalanges of three fingers. There was also evidence of calcareous glands at the root of each lung. The Wassermann reaction was negative.

In 1920 a quadrilateral patch of redness and scaling developed over the right mandible. This began as a small scaly spot, and was now $1\frac{1}{2}$ in. in length by 1 in. in diameter.

The patient had been treated for the sclerodermia with polyglandular extracts by Dr. Hugh Smith, of Cape Town, but without benefit.

Dr. J. H. SEQUEIRA showed a case of *sclerodactyly*. The patient, a single woman, aged 50 years, remembered no infantile changes, but when a young girl she had frequent whitlows. By occupation she was a machinist.

Two years ago both hands swelled considerably in the summer. The swelling passed off in a month, leaving the fingers stiff. They had been stiff ever since, but the condition had not materially altered. She could separate the fingers half an inch only. She could not bring the thumb across the closed fist nor could she clench the hand. The wrist-joints were practically immobile, but they were not deformed. Both wrists had a smooth contour and the fingers were held straight, the terminal phalangeal joints being slightly flexed.

The skin of the fingers, hands and wrists was hard, fixed and not mobile. There was no pitting. Both forearms were affected, the left for about one-eighth of its length, the right for half its length.

On the manubrium sterni and the inner third of the left clavicle was a pale stiff sclerodermic area, the size of the palm of the hand.

There was no evidence of Graves's disease nor of myxœdema. There was a seborrhœic eruption on the face and neck and behind the ears, but there was no evidence of sclerodermia there.

X-ray photographs did not reveal any affection of the bones. The blood was found normal upon examination. The urine was slightly alkaline, but free from albumen and sugar. The Wassermann reaction was negative.

Dr. J. H. SEQUEIRA showed a case of *xanthoma*. The patient was a married woman, aged 46 years. Her general health had been good. There was no history of jaundice or other liver affection.

The eruption began twelve months ago in the form of yellow "pimples" on both knees; later the elbows were affected, and for some months both hands had been involved.

On each knee there was a raised nodular plaque of a yellowish-brown colour, about the size of a two-shilling piece. The patches were not tender or painful and were freely movable. On each elbow there was a raised patch of the same character, about the size of a

shilling. On the palms and palmar aspects of the fingers and thumbs there were numerous flat, yellowish lesions the size of a split-pea. The individual papules were well defined and the skin between them was healthy. The nails were unaffected. The urine was free from albumen and sugar, and there was no abnormal quantity of indican. The blood-count did not reveal any abnormality. The Wassermann reaction was negative.

The eruption closely resembled the type of xanthoma met with in association with glycosuria.

Dr. GRAHAM LITTLE showed a case of *Granuloma annulare*. The patient was a boy, aged 12 years. The lesions on the left hand were good examples of early *Granuloma annulare* and showed the pearly, isolated sago-like lesions arranged in a ring, which he regarded as the first sign of the disease; the ringed arrangement, he thought, generally came later, and it formed an important part of the symptomatology of the disease; he would hesitate to make a diagnosis in the absence of some ring-formation. He thought that the disease had tuberculous associations and he saw that in his text-book Darier held the same view. In this boy's case the condition had persisted for nine or ten months; it was not involuting in any way, but was inclined to appear in fresh places on the knuckles of the left hand, those of the right hand having been first affected.

Dr. AGNES SAVILL showed a case of (?) *diphtheria of the skin*. This girl had had a slight crusting and soreness at the end of the nose for four years. In 1917 she went to the Middlesex Hospital and she was told she had diphtheria of the nose. She was sent to a fever hospital, and there, apparently, she was injected with antitoxin. She was in the hospital for more than six weeks and at date of leaving there was little crusting left on the nose. Ulceration had, however, recurred in the last four months, and a pure culture of diphtheria bacillus had now been obtained by Dr. Embleton from the base of the ulcer. She was trying diphtheria vaccine; she first had 10 millions, after four days 20 millions, and yesterday 40 millions. She already looked much better in herself, though the local improvement was not so marked. The swelling and redness between the ulcerated areas had been reduced. Possibly there might be lupus or other disease present.

Dr. MACCORMAC said he remembered this patient at the hospital; he considered the condition was *Lupus vulgaris*. He thought it was desirable in such cases to consider whether the presence of such a parasite might not be accidental. Unless inoculations into guinea-pigs were made, it was in many cases impossible to separate these spurious types from the true diphtheria bacillus.

Dr. F. PARKES WEBER showed a condition somewhat resembling *Lupus pernio* in a child. (The case was described in full in the June issue of the Journal, p. 228.)

Dr. J. H. SEQUEIRA asked whether there had been gastro-intestinal trouble in this child. [Dr. WEBER: Very little.] He was particularly interested in this case, as he had just read a paper in the *Medical Journal of Australia** by Dr. Jeffreys Wood upon a condition called "erythrœdema" by Dr. Swift of Adelaide. The author gave Dr. Still as his authority that the condition was recognised in this country. It occurred in young children suffering from gastro-enteritis, who developed huge chilblain-like swellings of all the extremities. Dr. Swift gave it the name of "erythrœdema," because the extremities were red and swollen. Dr. Sequeira regarded the present case as an exaggerated instance of this. He considered it a toxic condition. When he had been attached to a children's hospital he had seen the condition occasionally. To be sure there had been no misunderstanding he (Dr. Sequeira) asked Dr. Still to read Dr. Wood's paper, and he was good enough to allow Dr. Sequeira to go to Great Ormond Street Hospital, where he showed him an instance, less marked, as the terminal phalanges had not lost tissue, but were blue and swollen.

Dr. H. G. ADAMSON said Dr. Weber asked him to see this patient in hospital. He had never seen anything quite like the condition before, except two or three cases of *Lupus pernio* in adults; the lumpy masses on the cheeks, hands and feet in this child were very suggestive of that disease. There was no case of *Lupus pernio* on record of the age of this patient. The bony loss might be simply an exaggeration of what was usually seen in *Lupus pernio*.

Dr. PARKES WEBER (in reply) said that if the present case was really an exaggerated form of erythrœdema, it must be the only case on record anything like it. In most of the cases published as erythrœdema recovery had taken place.

Dr. H. MACCORMAC showed two cases of *rodent ulcer*. The first patient was a woman, aged 50 years. She stated that fifteen years ago she noticed what she termed a little wart on the right ear; it remained without marked change until four years ago, when it began to ulcerate and to spread slowly. When she was seen, some five months ago, there was considerable ulceration involving the cartilage. The lesion measured 4 cm. horizontally and 2.5 cm. vertically; the typical appearance, the rolled edge of rodent ulcer was present at the margin. On November 23rd the affected area was exposed to the gamma rays of 3 grm. of radium for four and a half hours, the

* *Med. Journ. Australia*, February 19th, 1921, p. 145.

screening being so arranged as to cut off all but the most penetrating rays. Within four weeks there was very considerable improvement, although there was still active carcinoma present.

The next patient, also a woman, was aged 64 years. She came under observation in November, 1919. There was then an extensive hypertrophic carcinoma over the left frontal region about the size of a walnut, considerably raised in the centre. The consistence suggested a resemblance to that of raw potato. The patient had noticed the beginning of the disease eight years ago, and a more rapid spread during the last few years.

In this case applications of X-rays were first given. These exposures were followed by improvements. The actual cure, however, had been brought about by the use of 20 mgrm. of radium applied for one and a half hours.

Two interesting features might be noticed in this case: first, the patient developed at one period an indurated lymphatic gland in the pre-auricular region. This had all the appearance of a metastasis, but its inflammatory nature was proved by its ultimate complete disappearance. Secondly, comparison of this case with the first demonstrated that it was not necessary to employ massive doses of radium for the cure of extensive skin carcinomata.

Dr. S. E. DORE showed a case for *diagnosis*. The patient, a woman, aged 60 years, presented two small symmetrical patches on the extensor aspects of either forearm, of two months' duration on the left arm, and six weeks' duration on the right arm, consisting of a discoloured centre of a red or purplish colour without induration, surrounded by hard raised pearly papules, which had apparently resulted from the breaking up of a continuous edge. The whole patch had the appearance of having evolved from a single raised lesion which had undergone involution in the centre and spread at the periphery, and this course of events was confirmed by the patient. The diagnosis suggested was an unusual type of Granuloma annulare, alternative suggestions put forward by other members being those of persistent erythema and a manifestation of late syphilis.

Dr. S. E. DORE showed a case of *Schamberg's disease*. The patient was a healthy woman, aged 32 years. The eruption began two

months ago as scaly, brown patches on the knees, which spread gradually to the upper part of the thighs and downwards to the ankles. It consisted of burnt sienna-coloured patches and "cayenne pepper" points, not disappearing on pressure, forming a continuous but patchy eruption extending over the anterior tibial regions and the anterior surface of the thighs, with scattered lesions on the posterior and lateral aspects. Amongst the patches, especially on the legs, were some superficial dilated venules, but no large varicose veins. There was some itching at first, but this ceased after the use of a mild astringent lotion. The appearances seemed to correspond in every particular to the peculiar progressive pigmentary disease described by Schamberg. The condition appeared to be more common than the small number of recorded cases would lead one to believe. Exceptional features were the occurrence in a woman (most, if not all, of the reported cases having occurred in males), and the presence of itching.

Dr. GRAHAM LITTLE showed for Dr. WINKELRIED WILLIAMS a case of *rodent ulcer*. Patient was a male, aged 29 years, with a growth on the left lower eyelid, which Dr. Williams had regarded as rodent ulcer, but the small swelling was softer than was usually the case with rodent ulcer. Three doses of X-ray were given at suitable intervals (December 18th, January 12th, February 10th). After the third treatment the swelling had materially diminished but had not disappeared.

Dr. G. W. SEQUEIRA showed a case of *Dermatitis herpetiformis*. The patient was a school teacher, aged 48 years, and had suffered from the malady for the last eight years. It commenced on his scalp as an irritable rash, followed by erythematous patches and blisters on the neck. Vesicles and papules soon appeared on his chest and quickly attained a wide-spread distribution. His general health had been fairly good. All carious teeth were extracted last January, but this had not been followed by any amelioration in his symptoms. Two years ago he was in bed for a week with influenza, and during that time he was much relieved of his subjective symptoms, but on his getting about again they all returned. He had had very varied treatment but with little benefit till lately. Arsenic, which he had

taken on many occasions, had given him temporary relief at times, but the result of such treatment has never been very striking.

Recently he had been taking antimony in conjunction with arsenic. At the present time he was having 6 minims of vinum antimoniale and the same quantity of liq. arsenicalis after food three times a day. This had been followed by marked improvement. The local application of lenigallol and zinc paste had also been of great service to him.

Dr. AGNES SAVILL showed a case of *von Recklinghausen's disease*. The patient, a girl, presented the classical text-book symptoms of von Recklinghausen's disease. It was first noted at the age of fourteen, the age at which the disease usually becomes manifest. She presented large and small pigment patches, soft and hard fibromata, some of which were tender, others not. This girl was the least physically developed of all the members of the family. Ever since the disease commenced she had felt tired and ill, but she had no mental deficiency.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

THE ÆTIOLOGY OF ECZEMA. F. G. HARRIS. (*Arch. of Derm. and Syph.*, 1921, iii, No. 5, p. 579.)

THIS paper is published posthumously, and was an address delivered by Dr. Frederick G. Harris in January, 1916, as the retiring President of the Chicago Dermatological Association. According to him, the important factor in the production of eczema is an increased irritability of the skin, or of some structure in it, causing it to react readily to irritants of varying degrees of intensity. In eczema the skin is in such a highly irritable state that it reacts to stimulants so mild as to be physiological.

The object of this paper was to try and find the factor or factors which were responsible for the upsetting of the normal equilibrium of the skin and the causing of this state of irritability.

Weidenfeld, who made an extensive study of the reaction of the skin of eczematous patients to irritants, found that the skin of such patients showed a greater tendency to react than normal skin, and that the more acute the disease the stronger the reaction. He found also that the normal skin near an eczematous patch showed a greater reaction than that at a distance. He considered that this was due to the formation of toxic substances in the primary patch, which passed into the blood and caused changes in the skin, which predisposed to eczema.

This irritability, according to Harris, does not seem to reside in the epithelial cells, as it varies too quickly, and it seems more probable that the nervous system is responsible for it, especially the intra-epithelial nerve-fibrils, and that the blood-vessels are only secondarily involved.

The irritability can be diminished experimentally by epinephrin (adrenalin), either applied locally or subcutaneously.

The writer goes so far as to suggest that where an eczema is aggravated by errors of diet it is usually the protein of the food which is responsible, and that the protein may act by giving rise to some substance which, when absorbed, counteracts the action of the epinephrin.

The paper concludes with a series of interesting experiments to determine the frequency with which histamin (a toxic amin formed from histidin, which is a product of pancreatic digestion) is found in cases of eczema, the histamin being considered as a possible neutraliser of epinephrin, and certain incomplete experiments with regard to increase of indican in the urine in various skin-diseases.

J. M. H. M.

IMPETIGO CONTAGIOSA: RESULTS OF CULTURES MADE OF THIRTY CASES, WITH SPECIAL REFERENCE TO THE CHARACTER OF STREPTOCOCCI ISOLATED. DAVID L. FARLEY and FRANK CROZER KNOWLES. (*Arch. of Derm. and Syph.*, 1921, iii, No. 6.)

THE bacteriological results from cultures of thirty typical cases of Impetigo contagiosa were as follows:

It was found that with proper precautions and under proper conditions streptococci could be obtained from nearly all cases of impetigo if the material was taken from an early unerupted lesion or from the deep redder parts of a lesion from which the crusts had been removed.

Four different strains of streptococci were found, namely: *Streptococcus pyogenes*, *Streptococcus anginosus*, *Streptococcus subacidus* and *Streptococcus faecalis*.

In America the *Streptococcus faecalis* was not such an important factor as it was in Flanders. It could not be predicted from the aspect of the clinical lesion what strain of streptococcus would be found on cultivation.

J. M. H. M.

IS LUPUS ERYTHEMATOSUS DISCOIDES CHRONICUS DUE TO TUBERCULOSIS? WILLIAM H. GOECKERMAN. (*Arch. of Derm. and Syph.*, 1921, iii, No. 6.)

THIS paper consists of a statistical study bearing on the assertion that Lupus erythematosus discoides is of tuberculous origin. A group of 56 patients with Lupus erythematosus discoides was specially examined for tuberculosis; 56 records of patients with miscellaneous non-tuberculous dermatosis, but who were suffering from recognisable tuberculosis of other organs, were recorded; 53 patients with Erythematosus multiforme and Erythema nodosum were examined for tuberculosis; 37 cases of typical tuberculides were examined for tuberculosis and 84 per cent. gave definite clinical evidence of the disease; various evidence was also adduced in connection with the demonstration of tubercle bacillus and animal inoculation.

The study seems to show that the tuberculous origin of Lupus erythematosus discoides has not been proved experimentally, and the clinical study of those

cases seems to favour a belief that Lupus erythematosus is due to varied aetiological factors.

The following conclusions were arrived at:

(1) The incidence of clinical tuberculosis in dermatoses admittedly of non-tuberculous origin (32.1 per cent.) is approximately as high as in Lupus erythematosus discoides chronicus (35.7 per cent.)

(2) Clinical tuberculosis is no more frequent in dermatoses like Erythema multiforme and Erythema nodosum (32 per cent.), in some instances apparently of tuberculous origin, than in Lupus erythematosus discoides chronicus (35.7 per cent.).

(3) The frequency of clinical tuberculosis in patients with known tuberculides (84 per cent.) presents a striking contrast compared with the frequency of clinical tuberculosis observed in Lupus erythematosus discoides chronicus (35.7 per cent.). This contrast is so great that the belief seems acceptable that Lupus erythematosus discoides chronicus cannot have a pathogenesis identical with that of the tuberculides.

(4) The tuberculous origin of Lupus erythematosus discoides chronicus has not been proved by experimental work. Clinical observation, including this statistical study, seems to favour varied aetiological factors. J. M. H. M.

INDUSTRIAL DERMATOSES.

CAUSES OF SKIN-SORES AND BOILS AMONG METAL WORKERS: AN INVESTIGATION BY THE HOUGHTON RESEARCH STAFF.

(E. F. HOUGHTON & Co., Philadelphia, 1920, p. 51.)

CERTAIN parts of machinery which cut, mill, etc., metals require to be cooled and lubricated by a constant stream of circulating fluid. As it is used over and over again it soon gets dirty and contains metallic shavings. These so-called "cutting mixtures" are made up of varying proportions of the petroleum or coal-tar oils, soap, alkali, water, etc. Occasionally they cause very troublesome outbreaks of rashes and sores amongst employees working with them. Government departments in this country and America, interested in the control of these affections, have made many investigations with a view to ascertain and if possible eliminate the particular ingredient in these compositions which brings about the untoward results. Up to the present none of the findings are wholly convincing. The constituents held responsible by different authorities are: minute chips of metal which lacerate the tissues, the bacteria on the skin of the workers which are swept into the follicles and becoming confined there set up folliculitis and perifolliculitis, excessive alkalinity or some chemical irritant contained in the petroleum or coal-tar residues.

The heading of this paragraph appears to be the subject of a chemical and medical inquiry, into a trade disease, conducted by a lay corporation. The following is a shortened summary of the conclusions given in the *Journ. Ind. Hygiene*, April, 1921, p. 215 (abs.).

The infection is bacterial. The germs are not present in fresh oil, no matter what character or variety of oil is used. Bacteria are found in oils which have been used at least once. The germs do not create boils until they have secured ingress to the skin, or the skin is broken. All "cutting oils" have skin penetrative powers. This property of penetration is due to the high thermal conduc-

tivity of such oils; *i.e.* their ability to convey heat from the point of generation to the atmosphere. The oils can therefore penetrate the skin and actually do so through the pores. A hairy skin is particularly vulnerable, because it contains a superabundance of pores. The oil carries the skin flora into the pores or into the minute punctures made by the chips. These epidemics of boils are more common in hot weather and under hot working conditions. "Cutting compounds" during storage and when circulating through the machines should be protected from filth, refuse and expectoration. Residuum oils, especially such as are left after pressing out paraffin wax, are more harmful than those which come over in the process of distillation.

Cleanliness of the person and clothing is the best preventive. R. P. W.

SCLERODERMA AS A POSSIBLE MANIFESTATION OF CHRONIC ARSENIC POISONING. SAMUEL AYRES, JR. (*Journ. Ind. Hygiene*, April, 1921, p. 217 [abs.].)

THIS is a review by the author of his paper published in the *Arch. Dermat. and Syph.*, December, 1920, ii, pp. 747-756. The original suggestion of testing the urine of a scleroderma patient for arsenic was made by Dr. William H. Smith, Physician to the Massachusetts General Hospital, Boston. He found arsenic in the urine of an employee who for ten years had acted as foreman in a paper-box factory, and during his work was rather constantly exposed to paper dust, resulting from the trimming and cutting of paper and cardboard. This man presented the typical picture of a moderately advanced case of diffuse scleroderma of about one year's duration. The hands and forearms showed the greatest involvement. The cardboard and two of the samples of paper gave positive tests for arsenic.

Dr. Ayres reports four consecutive and two subsequent cases of scleroderma, in all of which arsenic was found in the urine. Two were of the diffuse variety of the disease and one was of the morphœa type. Three gave clean-cut histories of exposure to arsenic. One man worked in a box factory; another patient kept a grocery store, and during four years kept an open saucer filled with arsenate of lead under her counter to kill mice. The third was a school teacher, who, as director of the school gardens, used arsenical sprays.

The writer of the article is careful to emphasise the point that his article is simply a statement of facts, not a proof that arsenic is the cause of scleroderma. He mentions that Putnam in 1890 found traces of arsenic in 43 per cent. of forty-eight samples of urines selected at random, and very properly concluded that the mere presence of this poison in a patient's water was not enough to account for doubtful symptoms. R. P. W.

SKIN-LESIONS FROM COAL TAR AND NAPHTHA DERIVATIVES AND THEIR PHOTODYNAMIC ASPECTS. F. KOELSCH. (*Zentralbl. f. Gewerbehyg.*, September, 1919, vii, No. 9, p. 157; in *Hyg. Rundschau*, July 1st, 1920, xxx, No. 13, pp. 406-7.) **TAR MELANOSIS IN THE MAKING OF DRY BATTERIES.** ALFRED ARNSTEIN, (München). (*Med. Wochenschr.*, July 30th, 1920, lxvii, No. 31, p. 902.)

THESE papers, abstracted by Sevringhaus and Noyes in the *Journ. Ind. Hygiene*, May, 1921, p. 11, deal chiefly with the well-known pigmentation caused by the vapour and fine dust of coal-tar.

In the former Koelsch describes how, during the war, the substitution of coal

oils for petroleum oil brought out such severe skin-injuries, particularly in women, that the output of work was very seriously reduced. The clinical manifestations were comedones, callosities, acneiform growths and pigmentation. One characteristic of these coal-tar oils is, that if they soil the skin exposed to the air, the direct light of the sun, or the snow, it becomes markedly irritated and the pain unendurable. He also saw severe inflammation from the medicinal use of war-time vaseline. The author thinks that German coal pitch contains some photodynamic constituent which is lacking in the American product. To this agent he attributes the black discoloration and advises that work should be carried out during the night, or at any rate that the employees should be protected from the full glare of the sun.

In the second paper Arnstein particularises a certain process in an electric flashlight factory. Women, whilst spreading thin layers of tar between the elements of the batteries, raised light-brown clouds of tar vapour. After a few weeks all their exposed skin took on a deep brown colour. It was most intense on the forehead and faded off rapidly on the neck and elbows. Normal places of pigmentation, such as the nipples and axillæ, were not affected. No other signs were present, except a moderate eosinophilia.

Arnstein thinks that some substance present in the tar sensitises the skin to light-rays and induces a protective pigmentation. R. P. W.

VEGETABLE PARASITES.

PICRIC ACID IN THE TREATMENT OF SEVERE EPIDERMOPHYTON INFECTION. RICHARD S. WEISS. (*Arch. of Derm. and Syph.*, 1921, iii, p. 404.)

THE author finds picric acid a particularly useful application in the treatment of ringworm of the feet and toes. He uses a saturated solution of picric acid in water as follows: Thin layers of cotton are placed between, under and above the toes. The cotton is then moistened with the picric acid solution and a light muslin bandage applied. The solution is poured on the cotton three times a day and the cotton is changed daily. The patient is kept at rest. In two or three days the swelling and inflammation subside to a large extent and the macerated epithelium hardens, later flaking off and revealing underneath fairly normal skin, which, however, is tender and delicate. The picric applications are then discontinued. At this stage sometimes a virtual cure is attained, and all that is necessary is a careful daily foot-bath followed by the liberal application of boric acid, zinc oxide, calamine dusting powder between the toes and inside the socks and shoes. The more severe cases should be treated with Whitfield's ointment or pyrogallie acid and salicylic acid combinations after the picric treatment.

The only disadvantage of this treatment is the yellow stain caused by the picric solution, and this is of little moment.

He does not recommend the use of this solution for more than a week at the longest, because of the danger of poisoning. J. M. H. M.

THE VIABILITY OF RINGWORM FUNGI IN DRY CUTANEOUS MATERIAL. DAVID L. FARLEY. (*Arch. of Derm. and Syph.*, 1921, iii, No. 6.)

THE object of the experiment was to determine how long dried material containing fungus could remain infectious in articles of clothing, brushes, combs,

etc. The material consisted of dried hairs, crusts, scrapings, etc., which had been preserved with black photographic paper and enclosed in a white paper envelope. These were planted out on Sabouraud's proof agar without previous alcoholisation.

It was found that in one-third of the epidermophyton cases viable cultures could be obtained after more than five months, but that the viability was lost in older specimens and no growth was obtained in a group of eight samples over 500 days old. The fungus from *Tinea corporis* (circinata) was found to be much less resistant, and material from six cases of 244 days old and older gave negative results.

J. M. H. M.

NEW GROWTHS.

LYMPHANGIOMA. EDWARD A. OLIVER. (*Arch. of Derm. and Syph.*, 1921, iii, No. 5, p. 608.)

THE comparative rarity of lymphangioma makes this case of special interest.

The patient was a Greek, aged 48 years, who presented dusky bluish-red puffy swellings elevated like lipomata on the dorsal surfaces of both hands, the flexor surface of one wrist and both forearms and the dorsal surface of the third toe on the right foot. On pressure the sensation was something like that one feels in pressing an umbilical hernia in an infant. The skin over the tumours was thick and hard. They varied in size from a split-pea to rounded tumours an inch or more in the long diameter. On puncturing a large lesion it was found to be made up of a number of multilocular cysts. On microscopical examination the cysts were seen to be lined with epithelial cells. The type of lesion corresponded to the class described by Unna as lymphangioma of the hypoderm.

J. M. H. M.

STATISTICAL AND HISTOLOGIC STUDIES OF FORDYCE'S DISEASE. A. MARGOLIES and FREDERICK WEIDMAN. (*Arch. of Derm. and Syph.*, 1921, iii, No. 6.)

AFTER reviewing the literature of the subject from 1896, when Fordyce drew attention to the condition, up to 1919, the writers give the result of a statistical study of 248 persons—127 males and 121 females of all ages—in which the condition was sought for. It was found that 70 per cent. above the age of puberty exhibited the lesions, that males and females were about equally affected, that the incidence increased with age, and that it occurred earlier in males than in females. The youngest age at which it was observed was three years and the oldest eighty-five. A histological examination established the lesions to be the result of the underlying presence of sebaceous glands and not due to a degeneration of surface epithelium. It is possible that embryonic sebaceous glands became snared off, and, about the age of puberty, increased in size and gave rise to the lesions. According to the writers the lesions have no pathological significance, and they doubt the propriety of calling the condition a disease.

J. M. H. M.

BLASTOMYCETOID BODIES IN A SARCOMA-LIKE TUMOUR OF THE LEG. FREDERICK D. WEIDMAN and HENRY R. DOUGLAS. (*Arch. of Derm. and Syph.*, 1921, iii, No. 6.)

A CASE is reported in which a sarcoma-like tumour, about the size of a small lemon, was removed from the leg of a woman, aged 23 years. On histological

examination it was found to consist of vascular granulation-tissue with tubercle-like granulomas and blastomycetoid bodies. These bodies were regarded as higher fungi and not as degenerative tissue products or concretions.

J. M. H. M.

SYPHILIS.

ACQUIRED SYPHILIS IN A CHILD. NORMAN PAUL. (*Med. Journ. of Australia*, April 16th, 1921, p. 312.)

THE patient was a girl, aged 2½ years, who contracted syphilis from an infant brother with congenital syphilis. Seven months before the mother brought the boy, then about eight weeks old, to Dr. Paul with signs of congenital syphilis, but she discontinued the treatment on the disappearance of the local lesions. She returned with the same infant with signs of recurrent cutaneous lesions, with marked fissuring of the lips, with depressed bridge of the nose and the appearance of a congenital idiot. Along with this unfortunate child she had a bright little girl of 2½ years whom she casually asked Dr. Paul to examine. This examination disclosed on the lower lip a little to the right of the mid-line an indurated-looking sore with a slightly depressed centre about the size of a threepenny-piece, together with an enlarged submaxillary gland on the right side. Diagnosis of chancre was made. By dark-ground examination spirochaetes were demonstrated. The chancre was believed to be contracted by the child while kissing its infant brother. [It should be remembered that there may have been other sources of infection in one of the parents, as congenital syphilis is not usually highly contagious.—J. H. S.]

J. H. S.

SYPHILITIC BACKACHE. JOSEPH VICTOR KLAUDER. (*Arch. of Derm. and Syph.*, 1921, iii, No. 6.)

ACCORDING to the author, syphilitic backache, in the majority of instances, is a symptom of spinal cord syphilis; it is meningeal in origin and due to irritation of the posterior sensory roots. It may be acute, subacute or chronic, and may be present from the exanthematous period of the disease until many years later.

Backache may also be due to syphilis of the lumbar muscles, when it is probably rather a toxic expression of the acute spirochaetemia than a syphilitic myositis. It may be due also to syphilis of the vertebrae which is met with in the cervical rather than in the lumbar region.

Backache may also be caused by synovitis of the spinal joints.

J. M. H. M.

A BIOLOGIC STUDY OF LATENCY IN SYPHILIS. MARTIN F. ENGMAN and FREDERICK EBERSON. (*Arch. of Derm. and Syph.*, 1921, iii, p. 347.)

IN this study *Spirochaeta pallida* have been isolated in five instances from latent syphilitic patients—three times from inguinal glands and twice from the semen. The strains produced typical syphilis lesions in rabbits' testicles and could be recovered and propagated for an indefinite number of generations. The incubation periods of spirochaetes isolated from the gland were respectively 50.

54 and 133 days, the last being doubtful owing to an early secondary infection in the experimental animal. The two strains which were isolated from the semen developed after four and seven months respectively.

Spirochaete pallida were isolated from patients who gave a history of syphilis dating back eleven and thirteen years in two instances and one year in three instances. An inguinal gland and the semen proved positive for spirochaetes in the two first cases mentioned, and the glands and semen in the last named. In this series of positive results a gland was found to be infectious in the case of a man whose Wassermann reaction had been negative following treatment, and at the time of taking a specimen for the experiment gave a reaction in the cholesterin antigen only.

It appears from this investigation and from that of others that the blood and other body-fluids, excepting semen, are not infectious in latent syphilis, or if so, rarely.

One-third of the total number of spinal fluids from latent syphilitic patients gave evidence of lymphocytosis, and one gave a positive Wassermann reaction.

The groups studied were composed of untreated patients as well as of those who had received no treatment within the past two years. Between the time of taking specimens for inoculation of rabbits and the first symptoms or a suggestive history of syphilis in these patients from one to forty years had elapsed.

Of a total of 500 cases of syphilis which were seen at the clinic, 75, or exactly 15 per cent., of the number were definitely latent.

These investigations demonstrate the fact that those who give a history of a syphilitic infection may harbour active virulent *Spirochaete pallida* for years, and this in the face of irregular negative Wassermann reaction or slight reaction in the cholesterin antigen only.

J. M. H. M.

A COMPARISON OF THE WASSERMANN AND SACHS-GEORGI REACTIONS IN THE SEROLOGIC DIAGNOSIS OF SYPHILIS.

ROBERT A. KILDUFFE. (*Arch. of Derm. and Syph.*, 1921, iii, p. 415.)

THE result of 296 parallel Wassermann and Sachs-Georgi reactions are reported. The Sachs Georgi reaction was rather difficult to read, and the results of the series indicated that the reaction was not as delicate or trustworthy as the Wassermann reaction, and that the Sachs-Georgi reaction might be positive with Wassermann-negative serums and negative with Wassermann-positive serums, and that the number of non-specific reactions was sufficiently high to render the test unreliable as a means of diagnosis.

J. M. H. M.

CONCERNING THE SPECIFICITY OF CHOLESTERINISED ANTIGENS IN THE SEROLOGIC DIAGNOSIS OF SYPHILIS.

ROBERT A. KILDUFFE. (*Arch. of Derm. and Syph.*, 1921, iii, No. 5, p. 598.)

THE conclusions arrived at in this paper are the following :

1. All Wassermann reactions should include at least three antigens of varying delicacy: preferably a cholesterinised extract of human heart, an extract of acetone-insoluble lipoids, and an alcoholic extract of syphilitic foetal liver.

2. Wassermann reports should give the antigens used, the reaction to each, and the interpretation of the reaction as a whole, with, perhaps, the dose of serum tested and the method of fixation.

3. Reactions with cholesterinised antigens of + + + + or + + + degree are indicative of the presence of syphilitic "reagin" in the blood.

4. Reactions with cholesterinised antigens below the grade of + + + should be looked on as suspicious and as indicating the necessity for further investigations and should not be looked on as invariably false or proteotropic fixations.

5. Syphilitic patients under treatment should remain under observation until complement-fixation tests are repeatedly negative to cholesterinised extracts, not only with the blood-serum, but, if possible, with the spinal fluid.

J. M. H. M.

QUARTERLY SURVEY OF DERMATOLOGICAL LITERATURE.

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FOCAL INFECTION.

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PART I.

REPEATEDLY verified observations have proved that hæmolytic streptococci are commonly harboured in the tonsils and throat of healthy persons. Smillie* estimates that about 50 per cent. of normal throats contain these bacteria. Nichols and Bryan† out of 100 excised tonsils found 75 pairs to contain hæmolytic streptococci. Blanton, Burhans and Hunter‡ estimate the frequency of occurrence at 90 per cent. But their investigations were carried out in a military camp, during the Great War, in which streptococcic respiratory affections occurred with alarming frequency. These observers rarely found hæmolytic streptococci in throats of persons whose tonsils had been completely enucleated.§ The tonsillar tissues readily lend themselves to bacterial infection owing to the presence of crypts, or follicles, which pass from the pharyngeal surface into the deep

* Smillie, W. G., *Journ. Infect. Dis.*, 1917, xx, p. 45.

† Nichols and Bryan, *Journ. A.M.A.*, 1918, lxxi, p. 1813.

‡ Blanton, Burhans and Hunter, *Journ. A.M.A.*, 1919, lxxii, p. 1520.

§ Later observations have proved the presence of streptococci in tonsillec-
tomized throats, but reference will be made to these observations in Part II of
this paper.

parts of the tonsils and which favour the accumulation of bacterial and cellular products. D. J. Davis,* of Chicago, in his researches on the bacteriology of the faucial tonsils of 45 patients suffering from chronic joint affections, nephritis, endocarditis, rheumatic fever and recurring tonsillitis, found that the flora of the crypts differed from the flora of the surface of the tonsil. In almost every case a pure growth, or almost pure growth, of hæmolytic *Streptococcus pyogenes* was obtained from the crypts, while from the surface the predominating bacterium belonged to the *Streptococcus viridans* group, all producing green colonies on blood agar. There is now a consensus of opinion that tonsillar infection and disease of the gums and alveolar socket may be followed by systemic disease, such as acute rheumatic fever, infective chorea in the earlier periods of life, endocarditis, arthritis, and some forms of nephritis; and other symptoms, such as muscular pains, recurrent headaches, anæmia, etc.

With systemic infection we are not at present concerned. The question for us is, Is there any ætiological connection between oral and tonsillar infection and certain chronic skin-diseases? Or, to put it more broadly, can focal infection in any part of the alimentary surface, or of the respiratory and genito-urinary passages, give rise by direct sequence, or by indirect sequence, to chronic diseases of the skin?

CLINICAL AND BACTERIOLOGICAL REPORTS CONCERNING ORAL AND TONSILLAR INFECTION AND CHRONIC CUTANEOUS DISEASES.

1. LUPUS ERYTHEMATOSUS.

On April 15th, 1920, Dr. H. W. Barber† read a paper before the Royal Society of Medicine (Sect. Derm.) on Lupus erythematosus treated by autogenous streptococcic vaccine prepared from enucleated tonsils.

CASE 1.—The patient, W. H—, male, aged 34 years, had suffered for nine years from Lupus erythematosus of the face. He gave no indication of latent tuberculosis, and the bacteriological examination of the faeces was negative as regards streptococci.

The tonsils, examined by a laryngologist, were found decidedly septic. They were enucleated on October 13th, 1919. A pure culture of *Streptococcus longus* was obtained from them. He received fifteen injections of an autogenous vaccine at suitable intervals extending over six months. Under this vaccine treatment,

* D. J. Davis, *Journ. A.M.A.*, 1910, lv, p. 26.

† H. W. Barber, *Proc. Roy. Soc. Med.*, xiii, pt. i-v, p. 94.

with no local treatment except soothing applications, an extraordinary improvement took place. All the infections were followed by local reactions in the patches, sometimes very intense. The dose injected varied from 5 millions to 12.5 millions.

CASE 2.—A lady, aged 34 years, suffering from Lupus erythematosus of the face and hands of recent origin. Bacteriological examination of the teeth and faeces was negative. The tonsils were found to contain liquid pus. They were enucleated, and she had a "very high temperature" for several days following the operation, with a severe streptococcic infection of the throat. During the febrile period she had a marked local reaction; the erythema spread, her hands and feet burned, and she felt ill. She had autogenous vaccine treatment, but no local applications. "She did remarkably well, and is now (April, 1920) practically cured." The examination and cultivation of the streptococci by Dr. F. A. Knott showed that they belonged to the hemolytic group, that they acidified milk and were absolutely insoluble in fresh dilute bile. Dr. Barber concludes from these and other observations that Lupus erythematosus is due to focal streptococcic infection either of the tonsils, the gums and alveolar sockets, or in some part of the alimentary canal.

In the brief discussion which followed Graham Little cited a case of acute Lupus erythematosus in a patient with healthy tonsils and teeth, but with pulmonary tuberculosis. H. G. Adamson alluded to six cases of Lupus erythematosus, which he had treated by typhoid bacillus vaccines. Each infection was followed by a local reaction in the patches. The result was improvement followed by relapse. Whitfield alluded to one of his cases in which the tonsils were enucleated and this was followed by spontaneous disappearance of the disease without vaccination.

If we make a mental analysis of these cases and of the discussion which followed it seems to me that two issues have been confused: There is first the positive clinical fact that Lupus erythematosus may completely disappear after enucleation of the tonsils, and secondly the inductive inference that all cases of Lupus erythematosus are consequent to streptococcic focal infection. The first—which is pregnant with significance—the disputants, it seems to me, undervalued; in the second issue I regard their opinion as being more logical than that maintained by Dr. Barber, but to this I shall advert after I have recorded other cases.

2. ALOPECIA AREATA.

Dr. H. W. Barber's second communication on focal infection appeared in the January number of this Journal for the current year. In the study of a series of cases of Alopecia areata he found that this

disease is associated with infected tonsils, with or without adenoids alone in 62 per cent., with oral sepsis alone in 5 per cent., with oral and tonsillar sepsis together in 25 per cent., with chronic otitis media and naso-pharyngitis in 2 per cent., with chronic naso-pharyngeal catarrh without obvious tonsillar sepsis in 4 per cent., and with severe ethmoidal suppuration with polypus in 2 per cent.

Barber and Zamora have found that the *Streptococcus pyogenes longus* is the usual infecting organism. They report seven cases in which enucleation of the tonsils was followed by rapid recovery.

3. THE WRITER'S CASES OF ORAL OR TONSILLAR SEPSIS IN RELATION TO VARIOUS CHRONIC SKIN-DISEASES.

A laryngological and aural examination was made in twenty cases by my colleague Mr. Thomas Guthrie, Aurist and Laryngologist to the Liverpool Royal Infirmary. Enucleation of tonsils was performed in 10 cases. Ten pairs of tonsils were examined. Immediately after the operation I bisected the tonsils with a sterilised knife; a series of tubes of "nasgar"* were inoculated by the surface streak method with material taken from the deep portion of the crypts and tonsillar tissue. The tubes were incubated in Prof. E. Glynn's laboratory, and the resulting cultures were stained and identified by Mr. H. W. Smith, senior assistant to the Professor. Of the 10 pairs of tonsils examined 10 yielded *Streptococcus longus*, 5 of these being pure or almost pure cultures; of the remaining 5, 4 were mixed with *Staphylococcus aureus* and one with *Pharyngus siccus*. Further details will be found in the reports of the cases.

CASE 1.—Lichen planus; Septic Tonsils; Enucleation; Complete Recovery.

Nurse E. B.—, female, aged 30 years, had suffered from Lichen planus with severe pruritus for five months before coming under my care. Two morphological types of lesions were presented—the *planus* (the more numerous) on the wrists, elbows, forearms and neck; the *annular* (sparse) on the thighs and buttocks. She submitted to vigorous external treatment for five months with arsenic and thyroid internally; six intra-muscular injections of colloid arsenic

* "Nasgar" is a nutrient medium consisting of beef extract with 2 per cent. peptone, 1 per cent. sodium chloride, 2.5 agar. To each litre of this medium 400 c.c. of ascitic fluid is added. A small quantity of casein is added to prevent coagulation of the ascitic fluid. The reaction of the medium is estimated as + 10 per litre, or 1 c.c. of normal HCl per cent.

were also given. The result was unsatisfactory, the eruption persisting in all parts except the neck and chest, where it disappeared under local treatment.

On January 20th, 1921, the naso-pharynx was examined by Mr. Guthrie. He reported: "Nasal cavities and accessory sinuses are normal. Tonsils somewhat enlarged and decidedly unhealthy. Naso-pharynx is normal. Enucleation of the tonsils seems to be indicated in this case." The patient had an upper and lower denture.

February 1st: Both tonsils enucleated. Cultures: Almost pure *Streptococcus longus* with some yeast-cells. An autogenous vaccine was prepared.

I saw the patient a fortnight ago after the operation, and the change in her condition was astonishing. All the Lichen planus papules were resolving, and there was a marked diminution in the hyperemia and the pruritus. There had been no treatment of any sort during this fortnight.

From February 16th to July 25th the patient received thirteen injections of an autogenous streptococcus vaccine varying from 5 millions up to 100 millions. No constitutional or local reactions followed the injections. Recovery was uninterrupted, and at the end of three months the eruption had almost completely disappeared with the exception of traces of the rings on the buttocks and thighs. No external or internal treatment of any kind was given except the vaccine injections. The fact should be noted that resolution of the papules occurred without obvious desquamation. The case resulted in complete disappearance of the eruption.

CASE 2.—Alopecia areata; Septic Tonsils; Enucleation; Culture of Pure *Streptococcus longus*; Recovery.

F. W. W—, male, aged 25 years, was one of a family of three, strong hair growth being characteristic of the family. He did not complain of ill-health, and he had not suffered from influenza. He served in the war, but there was no history of shell-shock. The alopecia was first noticed in November, 1919, and by April 9th, 1920, the scalp was almost entirely bald. Local stimulating treatment was applied. In July some sign of a growth was noted on the scalp, but none on the eyebrows or face. In October the hair of the scalp was re-growing sparsely. Low pressure in the hypoderm was marked.

January 19th, 1921, Mr. Guthrie examined and reported on the nose and throat: "The nasal cavities are normal. Naso-pharynx normal. Pharynx: A good deal of tonsil tissue is present on both sides, and is decidedly unhealthy, showing accumulation of cheesy *débris* in a number of the crypts. Teeth: There are one or two carious teeth, but there is no evidence of pyorrhœa, and the gums appear to be healthy."

February 1st: Both tonsils enucleated by Mr. Guthrie. Four tubes of nasarg were inoculated immediately after the operation. The resulting growth in all the tubes was an almost pure culture of *Streptococcus longus*. An autogenous vaccine was made.

The first injection was given on February 21st, and the subsequent injections were given at intervals of ten days for four months, the dose varying from 5 millions up to 100 millions. Thirty-eight days after the operation the hair was re-growing vigorously over the whole scalp; there were no bald areas, but the hair was thin over the crown. The colour of the hair was reddish brown;

that of the scalp bluish white, which is the normal colour of the human scalp. In April the hair was returning on the eyebrows.

In July the hair had re-grown uniformly all over the scalp and eyebrows, but the number of hairs per square inch was below the average of a man of twenty-seven free from follicular seborrhœa. The pressure in the hypoderm has risen in the anterior region of the scalp, but is still subnormal in the occiput. The patient notwithstanding is in excellent health, and is exceedingly well pleased with the result of treatment. The use of a soap solution and the ammonia lotion was continued without intermission, but the acceleration of growth following enucleation was so marked and prompt that I feel sure that this was the determining factor in his recovery. It should be noted that after none of the injections did the patient experience any itching, flushing or burning sensation in the scalp; nor did they produce any malaise, only a "tired feeling" for about eight hours after the injection.

CASE 3.—Alopecia areata; no Oral or Tonsillar Infection.

This case is of interest from a negative point of view. Miss A. F—, aged 23 years, had suffered from Alopecia areata of the scalp for some years, and the mother is said to have suffered from the same disease. There was no fullness over the thyroid; heart rhythm and sounds normal. Sleep capricious, appetite poor, headaches frequent; not constipated. Low pressure in hypoderm. Mr. Guthrie examined the nose, throat and ears, and reported: "Tonsils show no signs of sepsis, pharynx is normal, no adenoids are present. The nose is normal. The maxillary antra and frontal sinuses are clear to transillumination. No active ear disease."

CASE 4.—Alopecia and Lichen planus; no Oral, Tonsillar or Naso-pharyngeal Disease.

Negative as regards mouth, throat and nose. Mrs. E. M—, aged 54 years, suffered from Lichen planus, Lichen annulatus and Alopecia areata of the scalp. There are two well-marked atrophic patches on the left side of the scalp which were first noticed seven weeks ago. The lichen is grouped symmetrically over the clavicles, on the wrists and on the legs, where the raised annular border is more marked. A 24-hour specimen of urine gave a sp. gr. of 1024, an acid reaction, and was free from albumen and sugar. The patient came under my care on July 9th, 1920. The course of the lichen consisted in slow resolution of the papules. In three months all lesions had disappeared, leaving pigmented patches on the legs. The alopecia was slower in recovery. By November the patches had reached their limit of extension; there was some re-growth of hair, but not vigorous.

Mr. Guthrie reports: "The *nasal cavities* are normal. No *accessory sinus* disease. The *naso-pharynx* shows no evidence of disease. *Pharynx*: Very small; rather fibrous remains of the tonsils are present on both sides; no pus nor cheesy secretion can be expressed from the crypts. There is nothing to suggest the presence of any chronic septic process of the tonsils. *Teeth*: All absent; said to have been removed fourteen years ago. There had been no alopecia previous to their removal." I saw the patient again on January 10th, 1921. There had been no recurrence of the lichen, and the hair was re-growing over the bald areas.

CASE 5.—Alopecia areata capitis; no Tonsillar Disease, but Marked Pyorrhœa.

Negative as regards tonsils, but marked pyorrhœa. Mrs. R. W—, aged 32 years, has been married 6 years, and has had no children and no miscarriages. Her weight, without clothes, is 6 st. 6 lb. She has suffered for three years from almost complete alopecia of the scalp. She consulted me on November 16th, 1920, when the alopecia of the scalp was almost complete. The follicles on the crown showed distinct fibrous scarring. No enlargement of the thyroid; heart is normal as regards rhythm and sound; pulse is thin; no constipation, and the appetite is poor.

Mr. Guthrie reports:—"Tonsils: Small fibrous remains of tonsils present; no evidence of disease. Nasal cavities are normal. No accessory sinus disease. *Naso-pharynx* is normal." There was marked pyorrhœa and caries in several teeth. In April, 1921, all the affected teeth were removed. Since November of last year ammonia and cantharidin have been applied daily to the entire scalp. I saw the patient in August. The hair was re-growing irregularly, but the crown shows signs of permanent atrophy.

CASE 6.—Alopecia areata capitis with Septic Tonsils; Acne atrophica.

D. H. E—, male, aged 21 years, seen April 2nd, 1921. Has three bald patches of Alopecia areata on the scalp, first noticed in January of this year. Face is seborrhœic and shows signs of atrophy in the region of the sebaceous follicles.

Mr. Guthrie reports: "Nose normal, *accessory sinuses* normal, *naso-pharynx* normal. Tonsils decidedly septic, the crypts contain cheesy collections." There was no history of sore throats, or of tonsillitis. Enucleation recommended. The patient went to America on business and I have not seen him since.

CASE 7.—Alopecia areata beginning diffusely, ending in Area Formis associated with Influenza and Nervous Symptoms.

A. C. M—, male, aged 29 years, had a nervous breakdown in 1915 after influenza. In the summer of 1918 was in bed for a week again suffering from influenza. This was followed by diffuse loss of hair. Two years after the second attack bald patches began to appear on the face and scalp. When I saw him in September, 1920, the hair was disappearing diffusely on the crown, and acutely in patches on the sides and posterior parts of the scalp. In respect of the nose and throat Mr. Guthrie reports that the tonsils were very small, but some of the crypts contain cheesy collections, but no fluid pus. The nose and accessory sinuses were normal. Teeth and gums were healthy. Tongue rather furred, but the patient says that he has no digestive trouble. The chief clinical feature of this case was the unstable and poor nutrition of the nervous system. The heart action was rapid, pulse 102. Local stimulating remedies were prescribed, and internally calcium lactate *xv t.i.d.* for three days out of the week. Seven months later the hair was seen to be regrowing over all the bald patches. The calcium was now stopped and he was given *nux vomica* and iron, and told to continue the local treatment. He ceased to attend after this and I am unable to report the final result.

CASE 8.—Alopecia areata of Scalp, Face and Limbs, with Leuco-melanodermia. Tonsils Septic; Tonsillectomy. Culture: Pure Growth of *Streptococcus longus*. Recovery, but Hair does not Regain Normal Colour, but remains Permanently White.

J. M—, male, aged 35 years, is one of a family of five. Good hair-growth is characteristic of the family as a whole, but a brother, when aged 22 years, had bald patches on the scalp. The patient, J. M—, has suffered from leucotrichia and leuco-melanodermia of face and body for the last ten years. The baldness was first noticed about one month previous to his consulting me on February 9th, 1921, when the alopecia was well advanced on the crown, nape, and to a less extent on the sides of the scalp. Defective growth of hair was apparent all over the face, and some areas were completely bald. The sides of the face and neck and parts of the trunk, forearm and hands were strongly pigmented, the rest of the skin was pale, opaque and of sallow complexion, except in the leucodermic areas, which were preternaturally white; the thyroid gland can scarcely be felt. Heart action slow and steady, systolic and diastolic sounds normal. Suffers from general nervous depression.

Mouth.—Patient has an upper partial denture; has very moderate pyorrhœa.

Report by Mr. Guthrie on the throat and nose.—"Nose and accessory sinuses are normal. *Naso-pharynx* normal. *Pharynx*: Tonsils small and fibrous, but decidedly unhealthy. The crypts of both tonsils are infected, and in the case of the right a little fluid pus could be expressed. *Remarks*: This would appear to be a good case for enucleation of the tonsils as a possible source of focal infection."

February 22nd: Both tonsils were enucleated by Mr. Guthrie and four tubes of nasgar were inoculated immediately after their removal. The tubes were incubated at 37° C. The resulting culture in all tubes was a pure growth of *Streptococcus longus*.

Between March 16th and July 27th eight subcutaneous injections of an heterogeneous streptococcic vaccine* were given, the dose varying from 5 millions to 100 millions. No local or constitutional reaction followed the injections. Six weeks after enucleation there was a notable change in the patient's health and the hair was re-growing more vigorously. Three and a half months after the tonsillectomy the scalp was almost completely covered with white hair. Eyebrows white and feebly growing. No change in the leuco-melanodermia. The patient in much better health and well pleased with the result of the operation. During the whole of the injection treatment local stimulants were applied to the scalp. Whether the vaccine treatment influenced his recovery is not proven, but that the tonsillectomy influenced his health and aided in his recovery I think there can be no question.

CASE 9.

L. S—, female, aged 10 years, has an aural polypus. The scalp shows marked pityriasis, but no Alopecia areata. The polypus was removed by Mr. Guthrie and two tubes of nasgar inoculated immediately after the operation.

Culture: A pure growth of *Bacillus proteus*.

* The vaccine was obtained from Case 2.

CASE 10.

L. H—, female, aged 14 years, has septic tonsils. The skin and hair show signs of seborrhea: one or two comedones are seen on the face. No Alopecia areata. Both tonsils enucleated and two nasgar tubes inoculated.

Culture: Chiefly *Staphylococcus aureus* in both tubes and a moderate number of *Streptococcus longus* in one tube.

CASE 11.

J. S—, male, aged 12 years, has septic tonsils. The hair is strong; there is some pityriasis but no alopecia and no adenitis. Both tonsils enucleated and two tubes of nasgar inoculated immediately after the operation.

Culture: Almost pure growth of *Streptococcus longus*, a few colonies of *Pharyngeus siccus*. One tube remained sterile.

CASE 12.

C. E—, female, aged 13 years, suffers from septic tonsils and enlarged glands in the neck of twelve months' duration. The hair is strong and well developed. There is no pityriasis and no Alopecia areata. Both tonsils enucleated and two tubes of nasgar inoculated immediately after the operation.

Culture: *Pharyngeus siccus* and a moderate number of *Streptococcus longus* in both tubes.

CASE 13.

A. O—, girl, aged 10 years, suffers from the *status eczematicus*. The eczema first appeared in infancy and since then she has never been entirely free. The recurrence is generally in, or near, the same localities, the wrists, the forearms, hands, thighs, and post aurial. Suffers from adenoids and enlarged septic tonsils which were completely removed by Mr. Guthrie.

Culture: *Staphylococcus aureus*, *Streptococcus longus* and *Pharyngeus siccus* (Gram-negative). The effect of enucleation of the tonsils on the course of the eczema appeared to be *nil*. Just previous to the operation (March 15th, 1921) the eczematization had almost disappeared, only to relapse in April, about one month after enucleation of the tonsils.

CASE 14.—Alopecia areata with Post-nasal Catarrh; No Tonsillar Infection.

R. J—, male, aged 43 years, consulted me in March, 1915, for almost complete alopecia of the scalp and face of two years' duration. During the following six years the hair grew up to a certain point, but again fell off, and there was only a feeble growth of hair on the scalp when I saw him in January.

Teeth: The patient has an almost complete upper and lower denture.

Mr. Guthrie reports: "There is no evidence of disease of the tonsils. *Nasal cavities*: There is a little mucoid secretion present. No disease of the accessory sinuses. *Naso-pharynx*: Congested with mucopurulent secretion. There is a good deal of post-nasal catarrh, and this may be a possible source of infection."

CASE 15.—Prurigo-Eczema; Septic Tonsils; Enucleation followed by a Remarkable Recovery.

F. M.—, male, aged 20 years, has suffered from prurigo since seven years of age. He showed no signs of eczema during the first two years of life. In his third year he had a severe attack of scarlet fever from which he took eight months to recover. I treated him during the autumn of 1920 with only a moderate amount of success. In May, 1921, he had a severe relapse. There was now a marked change for the worst in the general aspect of the skin. The face was swollen and red, the lips and eyelids red and thickened: the normal tint of the skin of the body was replaced by a dull yellow grey, deepening in places to a marked melanoderma. The skin universally was increased in thickness and density; the follicles stood out as in goose-skin. Innumerable torn papules were scattered over the entire surface of the body and limbs. There was marked eczematization at the nape of the neck. The irritation was intolerable and resulted in violent scratching. The glands in the groins were enlarged.

Mr. Guthrie examined the throat and nose and reports as follows: *Nose*: Small polypus in the right side and a little also in the left. No evidence of any other disease of the nose or accessory sinuses:

Naso-pharynx.—Nil.

Pharynx.—Tonsils flat and fibrous with septic collections in the crypts.

Ears.—Gives a history of discharge from both ears, following scarlet fever many years ago. At the present time both ears are dry and free from active disease, but the tympanic membranes show some scarring.

May 10th, 1921: Both tonsils were enucleated, and four tubes of nasgar were inoculated with material taken from the deep parts of the crypts. The resulting cultures yielded *Staphylococcus aureus* and *Streptococcus longus*. A mixed autogenous vaccine was made containing these two organisms so that each c.c. contained the following proportions:

- (1) 5 million streptococci: 25 million staphylococci.
- (2) 25 million streptococci: 125 million staphylococci.
- (3) 100 million streptococci: 500 million staphylococci.

May 20th, ten days after the operation, there was an extraordinary improvement in his condition. The swollen hyperæmic condition of the face had disappeared. The eczema was almost well. The skin clearer and brighter. The congestion around the lesions on the body and limbs had subsided to a considerable extent. The pruritis had greatly diminished. He had had no external or internal treatment since the operation.

Between May 20th and July 20th he received five injections of the mixed vaccine, beginning with series I. On July 8th I injected 100 million streptococci and 500 million staphylococci; on July 20th I repeated this injection.*

No local or constitutional reaction followed any of these injections.

The improvement continued: the eczema had practically disappeared, leaving the skin slightly pink. There were a few superficial scratch lesions scattered over the abdomen and back. No local treatment beyond a little salicylic lotion at bedtime. On examining the abdomen the ileo-cæcal pouch and ascending

* Subsequent injections have been given at regular intervals by the family medical attendant.

colon show signs of dilatation and there is slight tenderness in the region of the appendix.

August 25th.—The improvement in the condition of the skin and the patient's general health is still more marked. The skin is practically free from lesions and the colour is brighter and clearer.

CASE 16.—Psoriasis; Tonsils Chronically Inflamed; Enucleation; Culture: Almost Pure Growth of *Streptococcus longus*, with a few *Staphylococcus aureus*. Operation followed by Extension of the Disease; Effect of Vaccine not Favourable.

E. J.—, female, aged 40 years, suffers from inveterate psoriasis, dating from ten years of age. When I saw her in April, 1921, the psoriasis patches were strongly developed, and were scattered over the scalp, trunk, groin, axilla and limbs: the lesions were typical in character. Mr. Guthrie's examination of the throat and nose showed that the tonsils were somewhat enlarged, and gave evidence of chronic inflammation.

Nasal cavities normal.

On May 23rd both tonsils were enucleated on Mr. Guthrie's recommendation. An autogenous vaccine was prepared. On June 6th, a fortnight after the operation, no improvement could be seen in her condition. Between June 6th and July 25th she received six injections of a mixed vaccine. The first series contained 5 million streptococci and 50 million staphylococci to each 1 c.c.; the second series 25 million streptococci and 250 million staphylococci; the third series 100 million streptococci to 1000 million staphylococci. The injections were given at intervals varying from 7 to 10 days. No local or constitutional reaction followed. The disease continued to advance. Soon after the injections were begun, fresh spots appeared in the neighbourhood of the old indolent patches, and these were absolutely unaffected by the enucleation and by the vaccine. No further injections were given after July 25th. Under suitable local treatment the patient began speedily to respond, the resolution taking place more rapidly in the thinner and more superficial patches and much more slowly in the thicker and indurated areas.

CASE 17.—Eczema of the Seborrhœic Type associated with Chronic Ear Disease; Culture and Vaccine Treatment; Result Doubtful, practically *nil* as regards Eczema.

Miss N. F. M.—, adult. The patient is very stout, and for five years has shown signs of eczema in the flexures, under the breasts, the groins, post-aural and scalp. For many years the eyelids have been red and thickened, and from the meati of both ears there has been a recurrent discharge. I kept the patient under observation for two years. The eczema always yielded to treatment, but the skin in the hot, damp situations showed a settled tendency towards eczematization. In April, 1921, two years after her first visit, the patient consulted me again. The infection of the conjunctivæ was marked and the edges of the eyelids were thickened; there was post-aural eczema and discharge from the left meatus, eczema in the groin and under the breasts. The scalp was not at present affected.

Mr. Guthrie reports:—*Right ear*: Chronic middle-ear catarrh of old standing with intact but much thickened tympanic membrane. *Left ear*: Chronic suppurative otitis media with destruction of the posterior half of the tympanic membrane. Offensive purulent secretion coming from the tympanic cavity. The discharge appears to be intermittent. According to the patient the ear is often quite dry for long periods. *Nose*: Deflection of septum to the right; offensive crust and muco-purulent secretion in both nasal cavities and in naso-pharynx. The condition is one of atrophic rhinitis (ozæna). No accessory sinus disease.

Pharynx: Mucous membrane of posterior pharyngeal wall shows a glazed, dry appearance usually associated with atrophic rhinitis.

Tonsils are very small, and one or two of the crypts contain minute cheesy collections. Swabs were taken from both the inner ear and from the nose and cultures made. *Streptococcus longus* and *Staphylococcus aureus* were isolated from the ear, and *S. aureus* alone from the nose. Mixed vaccines were prepared containing both organisms in three series:

- (1) 5 million streptococci, 75 million staphylococci.
- (2) 25 million streptococci, 250 million staphylococci.
- (3) 100 million streptococci, 500 million staphylococci.

Between May 3rd and 30th the patient received four injections, Nos. 1 and 2 being of the first series, Nos. 3 and 4 being of the second series. She then returned to Scotland with instructions to her family doctor to continue the injections.

What influence had the vaccine on the inflammatory symptoms? A rather doubtful one—certainly nothing striking or obvious as in the case of Lichen planus or that of prurigo. The local treatment was not suspended during the vaccine period. Progress towards the normal was steady, occasionally disturbed by slight exacerbations, but neither did the ears, nor the skin, nor the eyelids show any brilliant response to treatment. The eczema in this case I am persuaded was largely dependent on physical conditions. She was very stout, and gave a long history of eyelid trouble with a history of "lupus" of the nose when young. (This has entirely disappeared but there is a white scar on the right side of the nose.) In August I heard from her medical attendant that the discharge from the left ear had nearly but not entirely ceased.

CASE 18.—A Case of Marked Psycho-neurosis with Diffuse Loss of Hair. The Alopecia was not Accompanied by Porokeratosis, nor by Seborrhœa, nor by any Change in the Colour of the Skin. Tonsils Infected; Enucleation. Culture: *Streptococcus longus* and *Staphylococcus aureus*. Antogenous Vaccine given; No Benefit up to Present Date.

M. B. B—, spinster, aged 28 years, first consulted me in October, 1918, for diffuse alopecia. She had lost a very considerable quantity during the previous eighteen months. The skin presented the normal colour of the scalp. There was no seborrhœa and no porokeratosis. There was some slight intertrigo behind the right ear. I saw the patient again in May, 1920, when the neurotic symptoms were very marked. The alopecia continued. Examination of the

pelvic organs by a gynecologist showed that the uterus was enlarged and acutely retroflexed. This was corrected and the uterus stitched in its normal position. As a result of this operation the patient obtained some relief from the pain from which she habitually suffered, but the residue was more than sufficient to make her life miserable. Her life was one long complaint, and had led to a separation from her family. I sent her to a psycho-therapist but the result was disappointing. Mr. Guthrie, who examined the nose and throat, reports that the "examination of the nose shows rather narrow nasal passages with a little simple catarrhal rhinitis and a tendency to inferior turbinal hypertrophy; no accessory sinus disease. The tonsils are slightly larger than normal for her age, especially the right, and both of them show evidence of slight chronic inflammatory trouble in the crypts. The history suggests that this becomes more marked at times and probably causes a little secondary inflammatory trouble in the tonsillar lymphatic glands."

The tonsils were enucleated by Mr. Guthrie on August 2nd, 1921. Culture mixed colonies of *Streptococcus longus* and *Staphylococcus aureus*. Vaccine prepared.

August 19th: No improvement so far as resulted from the tonsillectomy. I injected 10 million streptococci and 100 million staphylococci. Further progress will be reported later.

CASE 19.—Alopecia areata capitis of 'Twenty-seven Years' Duration with Permanent Baldness at the Menopause.

Mrs. F. K.—, aged 54 years, has been nineteen years under my observation and during this period she has carried out continuous treatment. The case is too long to record in detail, but the following summary includes the main facts. Her sister suffered from Alopecia areata and for many years before her death had worn a wig.

The disease had started in my patient in 1894, and eight years later she came under my care when the scalp was more or less bald. She was then unmarried. Year by year the same order of events was noted—hair-growth in some portion of the scalp, loss of hair in other portions. This continued till her marriage in September, 1905, and seven months later she gave premature birth to twins, both of whom died a few days later. During her pregnancy the hair rapidly re-grew till the scalp was practically completely covered; this persisted for some two months when the alopecia again returned. For the next three years the same history was repeated, growth and recession taking place regularly. During her next pregnancy in 1908 there was a steady and vigorous growth of hair: the scalp was practically covered. A miscarriage at the third month reversed the condition of the scalp. The alopecia once more reappeared and the history of the succeeding years was growth and recession. No more pregnancies occurred. The last menses occurred in October, 1918. Since the advent of the climacteric period atrophy and recession have dominated overgrowth. The crown now appears definitely cicatricial; a few wisps of hair remain and the patient is now resigned to her wig. In January, 1921, Mr. Guthrie reported in regard to the nose and throat:—"Nose: Gives a history of vaso-motor rhinitis some two or three years ago. Nasal cavities at present quite healthy: No accessory sinus disease. Nasopharynx normal. Pharynx: A little tonsil tissue is present on both sides; the crypts do

not at present contain secretion and no collections of fluid pus are present. *Teeth*: The patient wears an upper and lower denture and there is slight gingivitis around the few remaining teeth."

It is difficult in this case to avoid the conclusion that the alopecia was in some way etiologically connected with the condition of the generative organs, either the ovaries or uterus.

CASE 20.—A Case of Alopecia areata of Scalp; No Tonsillar Infection.

A gentleman, aged 53 years, consulted me in January, 1921. He was suffering from Alopecia areata of the nape and sides of the scalp, and from ordinary diffuse alopecia of the crown. In the course of the last twenty-one years he had three attacks of Alopecia areata but confined to a solitary patch on the scalp. The present attack is much more severe than the previous ones, and was first noticed a week after his recovery from influenza. Mr. Guthrie reports:

"*Nasal cavities*: A little clear mucoid secretion is present in both nasal cavities, indicating the presence of slight chronic rhinitis, to which he is probably rendered somewhat liable by the presence of a deviation of the septum causing narrowing of the right nasal cavity. No evidence of any accessory sinus disease.

"*Tonsils*.—A very small amount of tonsil tissue is present and this is free from any inflammatory condition."

The gums show evidence of pyorrhœa. A radiogram of the teeth indicated that periapical trouble has disturbed some of the roots. The patient was advised to have these extracted. The case is still under observation.

SUMMARY.

If we tabulate and compare these cases we find that of the two cases of Lichen planus one was associated with tonsillar infection, while the other showed no oral, tonsillar or nasal infection; one made a remarkable recovery after tonsillectomy, the other slowly recovered by local treatment without tonsillectomy.

Of the eleven cases of alopecia (10 areata, 1 diffuse), five gave evidence of bacterial collections in the tonsillar crypts, six showed no evidence of tonsillar infection. Of the five with cryptic collections three submitted to tonsillectomy, and two of these with good results. Of four cases with marked bacterial crypts two showed a vigorous growth of scalp hair, one had pityriasis, and one seborrhœa capitis. An almost pure growth of *Streptococcus longus* was obtained from one of the boys with strong hair (Case XI).

One case of psoriasis with cryptic bacterial collections in the tonsils yielded an almost pure growth of *Streptococcus longus*, and tonsillectomy had no inhibitory effect on the disease; if anything it rather aggravated it. One case of the *status eczematicus* with bacterial tonsillar crypts yielded a mixed growth of *Staphylococcus aureus* and

Streptococcus longus. The tonsillectomy had no inhibitory effect on the eczema.

One case of eczema with otitis media showed no definite response to autogenous vaccination.

One case of prurigo (Case 15) showed a mixed bacterial collection in the tonsillar crypts, and tonsillectomy and autogenous vaccination was followed by a brilliant result.

A comparison between acute and chronic tonsillar infection shows clearly the necessity of distinguishing between cryptic bacterial collections and general infection of the tonsils. In the cases published by Barber and myself cryptic collections alone are concerned. The significance of cryptic collections cannot be estimated apart from the study of autolysis and anaphylaxis, and I propose to deal with these aspects of "focal infection" in the sequel to this paper.

CONCLUSIONS.

From the observations of Barber and the present writer and others the following conclusions can be logically deduced :

(1) That Lupus erythematosus is in some cases associated with oral, or tonsillar cryptic bacterial collections, the prevailing bacterium in the tonsil crypts being the *Streptococcus hæmolyticus*.

(2) That Lupus erythematosus may spontaneously disappear after tonsillectomy (Whitfield).

(3) That Lupus erythematosus may disappear after tonsillectomy and a series of injections of an autogenous vaccine prepared from a culture of *Streptococcus hæmolysans* (Barber).

(4) That Lichen planus may be associated with bacterial cryptic collections in the tonsils in which a *Streptococcus longus*, presumably hæmolytic, but up to the present not definitely proved to be so, was present in the crypts, and from which an almost pure culture was obtained.

(5) That Lichen planus may begin to resolve immediately after tonsillectomy.

(6) That concurrently with the injections of an autogenous streptococcic vaccine Lichen planus may completely disappear without the aid of external treatment.

(7) That psoriasis (one case), although it may be associated with

the growth of *Streptococcus longus* in the tonsil, is not favourably affected by tonsillectomy or by the injections of an autogenous streptococcus vaccine.

(8) That Alopecia areata is frequently associated with oral or tonsillar streptococcal infection, and that recovery may take place after tonsillectomy and the use of a streptococcic antigenous vaccine (Barber and Leslie-Roberts).

(9) That septic tonsils in children in which streptococci is the prevailing organism occur with a high degree of frequency without the concurrence of alopecia or any other cutaneous disorder.

(10) That prurigo may be associated with tonsillar infection in which *Staphylococcus aureus* and *Streptococcus longus* are the prevailing organisms, and that this disease may begin to spontaneously disappear immediately after tonsillectomy.

(11) That recovery from prurigo may proceed concurrently with the injection of an antigenous vaccine of *Staphylococcus aureus* and *Streptococcus longus*.

(12) That the *status eczematicus*, in one well-defined case, was not affected by the enucleation of septic tonsils in which *Streptococcus longus* was the prevailing organism.

But have we any grounds for a scientific generalisation that oral and tonsillar infection is the cause of Lupus erythematosus, Alopecia areata, Lichen planus and prurigo? I shall endeavour to answer this question in Part II of this paper.

(To be continued.)

[I wish to express my indebtedness to Prof. E. Glynn and Mr. H. W. Smith for their help and courtesy in the bacteriological work of this paper.]

CHRONIC FIBROID SUBCUTANEOUS SYPHILOMATA.

BY HERMAN GOODMAN, B.S., M.D.,

New York City.

THE subject of syphilitic manifestations on or near the skin and of long duration which do not show evidence of ulceration, but do show changes of apparent fibrosis, is still in obscurity. Rarely, indeed, would such be diagnosed clinically. It has seemed sufficiently interesting to publish these personal observations to bring the question a little into the foreground. Additions to the limited bibliography will be very welcome.

Case report.—The patient was an American, aged 36 years, and well educated. He had always lived in New York City. His father had died of pneumonia at the age of about fifty. His mother had died at thirty-nine of “heart trouble.” The patient has one brother and four sisters, who are all well. He does not know if his mother had any miscarriages. One brother and one sister had died early of unknown cause to the patient.

The patient had married at twenty-one. He has one child. There have been no other pregnancies. At twenty-six the patient acquired a lesion of the penis by extra-marital intercourse. He tried self-treatment, with no beneficial results. After the sore was present about a month he consulted a doctor, who told him it was a chancre. He is certain that the physician did not mention that the sore might be syphilitic in nature. Local treatment only was given. The patient has no recollection of having had any of the ordinary symptoms of the generalised secondary period of syphilis. There is no history of any other suspicious lesion. The patient continued to live with his wife. The latter has never to his or to her knowledge had any genital sore, nor any of the cutaneous symptoms of syphilis. She has for the last few years been becoming more and more nervous, and made more irritable with slight cause. She has also been complaining of being unable to do her house-work, and of general lassitude.

The presence of tumours on the left arm of the husband was first noticed about eight years ago. Additional masses have appeared in

an irregular order. Many physicians have been consulted regarding these tumours, but no definite diagnosis has ever been made. The tumours gave no subjective symptoms, but if a lesion was contused the patient felt pain, and would be troubled for a variable time according to the force of the blow.

The lesion on the right dorsum of the hand was first noticed about six months ago. It has rarely caused any pain.

There are no other significant details in the history.

Physical examination.—The patient was a male adult of good physique, who had led an active life and had done much manual work. He weighed 160 lb. Except for the described findings the man presented no abnormalities physically.

The right forearm below the olecranon presented two tumours. The first was about 2 in. below the olecranon, about an inch in diameter, and raised above the surface for about $\frac{1}{2}$ in. It seemed formed of one mass. It was moveable under the skin, and was moveable over the underlying structures for a limited extent. The second mass was slightly smaller than the first, and situated about 1 in. from it. It was also raised, but not as much as the first mass.

The left forearm presented three tumours about the elbow. The largest was situated symmetrically with the larger of the two on the right forearm, but was even a little bigger than that one. The second lesion on the left forearm was over the inner condyle. It was about $\frac{1}{2}$ in. in diameter, and at about the same height above the skin. A third tumour on this arm was about 2 in. above the olecranon, and was about $\frac{1}{2}$ in. in diameter and only slightly raised.

On the left lower leg, almost over the tubercle of the tibia, was a single tumour smaller in size than any on the arms. The lesion gave the patient more trouble than the others because it was much subject to trauma.

The skin over the tumours was perfectly normal.

There were no other tumours on the patient.

Over the metacarpal bone of the thumb of the right hand was a serpiginous tertiary syphilide about 2 in. by $1\frac{3}{4}$ in. The borders were raised, the centre clearing, and pigmentation was present. The patient presented no other abnormality of the cutaneous surface.

The clinical diagnosis of tertiary syphilis, serpiginous gumma of the

right dorsum and symmetrical syphilitic nodules was made. It was the first hurried impression that the tumours were attached to tendon, but subsequently it was definitely proven that the masses had no connection with the tendons.

The Wassermann was performed in duplicate, and both laboratories reported 4 + positive. (The blood of the wife was also 4 + positive.)

Following the venipuncture for the serological test, a small hemi-



FIG. 1.—Chronic fibroid subcutaneous syphilomata in male patient.

spherical mass about $\frac{1}{4}$ in. in diameter appeared at the site of the puncture. In rapid order similar masses, to the number of at least eight, appeared along the forearm of the arm from which the blood had been taken. These small masses gave no subjective symptoms.

The mass over the inner condyle of the left arm was removed under local anæsthesia. The specimen was fixed in formalin, sectioned and stained.

Dr. D. S. D. Jessup, Pathologist of the New York Skin and Cancer

Hospital, has kindly supplied me with this description of the histology of the mass removed :

"Fibrous tissue with heterogenous arrangement, fairly vascular, with round-cells scattered through the tissue, and aggregated near one area of necrosis. (Part of the necrotic tissue had been lost in the imbedding.) There are a large number of plasma-cells amongst the round-cells and scattered polynuclears. The arteries show marked thickening."

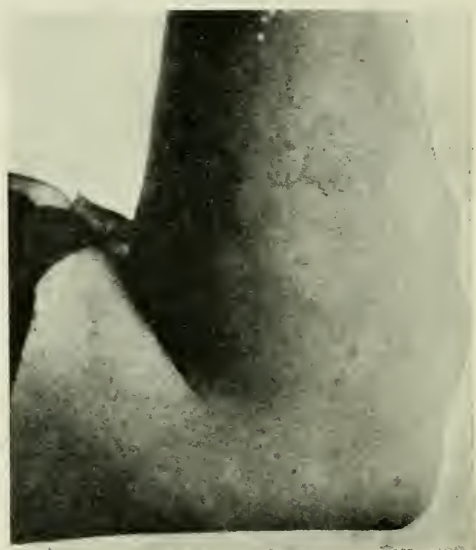


FIG. 2.—Chronic fibroid subcutaneous syphilomata in female patient. (Apparently attached to tendon.) (Goodman and Young.)

It should especially be noted that the mass which was removed and sectioned gave no indication clinically of the necrosis which was shown histopathologically. It was not possible to remove another of the masses, as the patient was under anti-syphilitic treatment, and the masses had been much reduced in size when the report of the section was received.

Treatment with neoarsphenamin (Dermatological Research Laboratories) was instituted. The improvement in the cutaneous gumma of the dorsum of the right hand was immediate, and the diminution of the tumour masses was concomitant with it. The masses disappeared

in order from the smallest, that on the leg, to the largest, that on the left forearm. The small hemispherical masses, which were mentioned as having appeared after the venipuncture, disappeared without leaving a trace. The other less recent tumours have left a slight sense of induration. In all the patient had twelve intravenous injections. A Wassermann test will be made after the expiration of six weeks from last treatment.

Literature.—This is the second opportunity I have had of searching the literature for cases similar to this one. In 1917, with Dr. William Jackson Young, a case of symmetrical tumours was studied. The tumours in that patient appeared to be attached to the tendons. It may be interesting to summarise that case-history and findings.*

The patient, R. R—, was an American woman, aged 29 years, and of more than average intelligence. She had married at eighteen years. She had one abortion at four months, and did not become pregnant again. Her husband, who had always been well, died in a railroad accident after two years of matrimony. At twenty-two the patient had married again. Although her husband is healthy and they desire children she has not become pregnant. The presence of the tumours on the extremities had been noted for about eight years. The first lesion was on the extensor surface of the left elbow, and about the size of a pea. Additional masses have appeared since in an unnoted order. For instance, the mass on the knee was of appreciable size when first noticed four years ago.

The nodules in the left elbow extended in a line from the olecranon process to the styloid process of the ulna. The first was situated 2 in. from the olecranon. It was semiglobular, and about 3 by 2 cm. It was entirely under the skin, which was freely moveable over it. The tumour appeared attached to or part of some subcutaneous structure. To the touch the mass felt lobulated, and made up of individual although connected masses. These were distinctly hard, and could not be indented by pressure over them. The skin over the lesion was not stretched, nor was it red.

The second tumour on the left arm was about $2\frac{1}{2}$ cm. distant from the first. It was 3 by 4 cm. It appeared made up of only two

* Herman Goodman and William Jackson Young, "A Clinical Pathological Study of an Unusual Syphilitic Manifestation Resembling Justa-Articular Nodules," *Amer. Journ. Med. Sci.*, 1920 (February), cliv, p. 231.

connected lobules rather than many, and otherwise was of the same appearance.

The lesions on the right arm were symmetrically arranged with those on the left. The masses were of the same character as those of the left arm.

Over the left knee and in the ligamentum patellæ, occupying the space of the normal indentation between the patella and the tubercle of the tibia, was a single mass about 2 by 2 cm., which gave the same resistance and was of the same structure as that described for the elbow tumour. The mass moved with the motion of the leg upon the thigh, and gave no discomfort.

The Wassermann was reported 4 + positive to both the alcoholic and the cholesterinised antigens.

Part of one of the nodules was removed for section. Preparations with Levaditi silver impregnation were made and prolonged search for *S. pallida* proved unavailing. Microscopical diagnosis was—"Granuloma, probably syphilitic."

This patient was not given the therapeutic test, as both Dr. Young and I were called into active service. Attempts made since my return to reach the woman have been unsuccessful.

The only other report of a similar case to that of the male patient described in this communication is a recent one by Weber.* At the time of publication of our woman patient there was no similar case in the literature.

Weber's patient was a man, aged 60 years, a healthy-looking, well-built Englishman who had enjoyed good health. He gave a history of gonorrhœa, once only at twenty, but as far as he knew had never had syphilis. His blood, however, gave a strongly positive Wassermann reaction. There was no history of gout, but he had occasional attacks of lumbago-like pains. The patient had multiple subcutaneous rather hard nodules on his lower extremities (chiefly on the right lower extremity), painless, and hardly tender on pressure, varying from the size of a hazel-nut to that of a medium-sized chestnut, and all of them situated between the ankle and a level just above the knee, excepting one, which was on the outer side of the middle of

* F. Parkes Weber, "Chronic Fibroid Syphilomata of the Legs Associated with Chronic Peri-Urethral Induration," *Brit. Journ. Derm. and Syph.*, 1920, xxxii, p. 173; also *Proc. Roy. Soc. Med.*, 1920, xiii, p. 105.

the right thigh. They began to appear seven or eight years ago, but were, according to the patient, at first temporarily removed by some kind of medicine.

For biopsy purposes one of these nodules was excised from the inner side of the left lower extremity just above the knee. It was lying deep in the subcutaneous fat and quite close to, though not

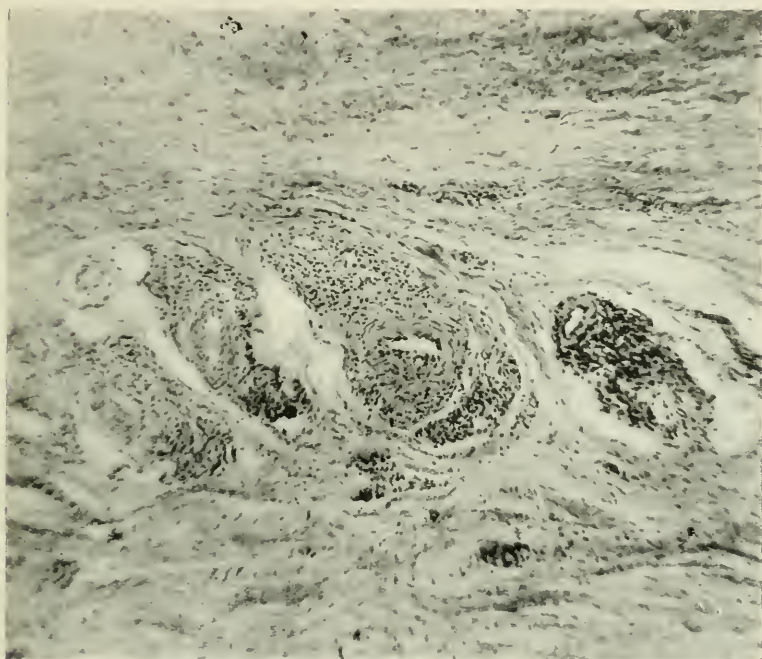


FIG. 3.—Histopathology in female patient. Low power. (Goodman and Young.)

actually adherent to, the capsule of the knee-joint. On cutting into it it seemed macroscopically to consist of hard fibrous tissue irregular in outline (not encapsuled). Microscopic examination showed a dense mass of fibrous (scar-like) tissue surrounded by and including numerous foci of chronic inflammatory small-cell infiltration (lymphocytes, fibroblasts, and some plasma-cells). No hæmorrhage and no necrotic areas were seen in the section, nor was there any decided obliterating thickening seen in the small blood-vessels. This examination proved that the subcutaneous nodules were not true tumours (fibromata), but were due to some kind of chronic inflammation,

probably syphilis. They are probably syphilitic gummata—or if the word “gummata” is wrong, syphilomata—though they have apparently lasted for years, and have become fibrous without undergoing a true gummatous or necrotic change. They might rightly be called “chronic fibroid syphilomata.”

The patient had an old disseminated chorio-retinitis of the right

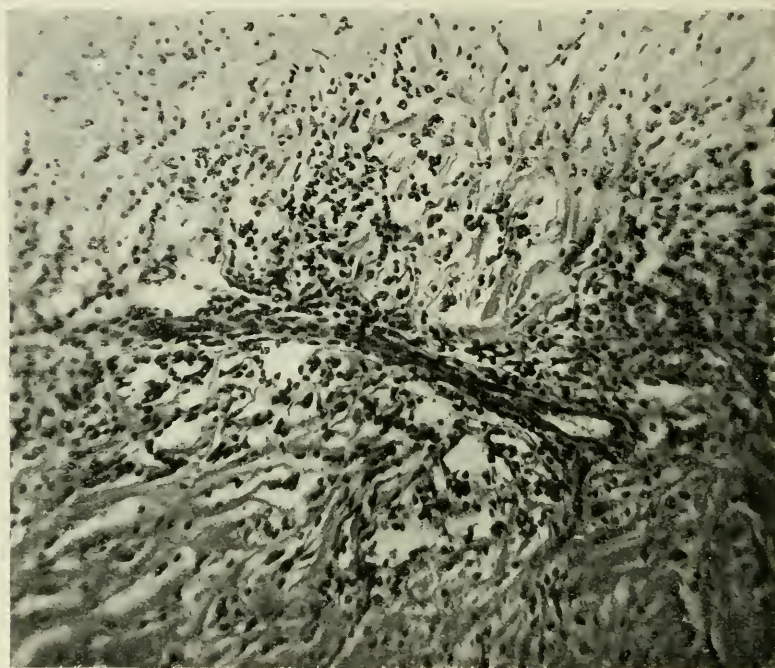


FIG. 4.—Histopathology in female patient. High power. (Goodman and Young.)

eye with posterior cortical cataract connected with it—also chronic peri-urethral induration of the penis.

Dr. J. J. Pringle, at the meeting of the Section of Dermatology of the Royal Society, before which the case was presented, asked: “Has anyone present observed or even read of the development of organised fibrous nodules like that in the patient exhibited from syphilitic gummata?”

In reply, Dr. Weber said: “I have not heard of a similar case of fibroid transformation of subcutaneous gummata, but I do know that some forms of visceral syphilis become fibrotic. It is the fibrosis of

the lung due to syphilis which is one of the most dangerous forms of visceral tertiary syphilis. And it is not very rare to find fibrous patches in the liver due to tertiary syphilis. I think that the present case is a very rare instance of tertiary syphilitic subcutaneous lesions having become partially fibrous, as syphilitic lesions sometimes do in the liver and lung. The peri-urethral fibrous induration (so-called "induratio penis plastica") may perhaps in this instance be accounted for in the same way."

Histopathologically, the case of Weber's and that of the woman observed and reported by Young and myself in 1917 were very similar. The case of the man, the first subject in this communication, showed slightly different histological characters, and it has seemed idle to speculate whether time, trauma or what not have influenced the microscopic picture of manifestations which clinically and historically have so much in common.

My male patient was the only one to show any response to treatment, and his therapeutic test was positive as anti-syphilitic treatment cleared the manifestations. The woman observed by us was not treated. Weber's patient showed no response to mixed treatment.

Summary.—I have presented the case-history and findings of a patient who presented subcutaneous syphilitic nodules for a long period of years, and which clinically did not show any evidence of ulceration. I have reviewed a second case formerly under the observation of Dr. W. J. Young and myself, in which syphilitic non-ulcerating nodules had been present subcutaneously for many years apparently attached to tendon. I have also referred to the report of Weber of a similar case. Histologically the characters of the lesions were essentially those of chronic granulomata. Antisyphilitic treatment in the case here reported for the first time cleared the lesions. Lesions such as are here described have not been widely discussed, and it is hoped that further observations will be published to clear this baffling question.

ROYAL SOCIETY OF MEDICINE.

DERMATOLOGICAL SECTION.

MEETING held on May 19th, 1921, Dr. ARTHUR WHITFIELD, President of the Section, in the Chair.

Dr. GEORGE PERNET showed a case of *Mycosis fungoides*. The patient was a man, aged 55 years. The disease started on the arms two years ago, and now involved the skin from head to foot, with small areas of normal skin here and there, especially about the trunk. The case was very characteristic of *Mycosis fungoides*—redness, infiltrations and tumours. His object in showing the case was to call attention to the beneficial action on the skin generally of sulphate of quinine, which he ordered in an effervescing form, viz. 3 gr. *ter in die*. The patient had only been under treatment for a fortnight. He had given quinine in this case on the strength of the great improvement, not only *quâ* the skin, but also from the point of view of the patient's general health and well-being, accompanied by increase in weight, which followed its administration in the case of a woman under his care with *Mycosis fungoides* in an earlier stage. He considered that quinine should be given a trial in this disease.

Dr. GRAHAM LITTLE showed a case of *diphtheroid ulceration of the skin*. The patient was a lady, aged 40 years, married. There was no syphilitic history: two negative Wassermann reactions had been obtained. For several years she had had a chronic ulceration affecting the nose, with a somewhat deep sulcus on the right nostril, usually covered with scabs. He considered syphilis and tuberculosis; but since Dr. Savill showed her case of diphtheroid infection he had had a culture made from one of the scabs, and the bacteriologist reported that it gave a pure growth of diphtheroid organisms. Whether that explained the ulceration was a matter of controversy. He believed it did. He had found some notes of thirty years ago of several cases he saw at Shadwell Children's Hospital of extensive ulceration in young children, giving diphtheroid cultures. One confirmation of the present case would be its response to specific vaccine therapy. They would remember a case he showed at the Section some months ago, of ulceration of the foot, in which Dr. Matthews, of St. Mary's, was able to grow a pure culture of what

apparently was Kloebs-Löffler bacillus. That had resisted all kinds of treatment, but it had done very well under vaccines prepared from the organisms so obtained.

Dr. J. H. SEQUEIRA asked if members had seen paralysis following these lesions, said to be due to "diphtheroid" bacilli.

Dr. G. PERNET mentioned a case of *Dermatitis gangrenosa infantum* associated with paralysis of the palate and diaphragm, ending fatally.

Dr. MACCORMAC quoted a case of an extensive granuloma which began in the scar of an appendicectomy. The condition was attributed to a diphtheroid organism which was isolated from the lesion, but he was able to show that the infection was really due to a streptothrix.

The PRESIDENT said that with modern bacteriological knowledge the profession had arrived at a rather unsatisfactory stage as regards the diagnosis of a disease by means of specific vaccine treatment. Ten years ago he would have agreed with Dr. Little that if a lesion yielded to the use of a specific vaccine prepared from the source, then the lesion was due to the organism cultivated. At that time the present knowledge was wanting, and he thought that this assumption was no longer justifiable owing to the experience of the use of non-specific vaccines and the production of protein shock. He suggested that for the future after preparation of the autogenous vaccine it would be well before using it to try the effect of some vaccine which undoubtedly did *not* contain the organism cultivated from the lesion. If the non-specific vaccine produced effects comparable in value with those obtained by the subsequent use of the autogenous vaccine, then no conclusion should be drawn as to the lesions being due to the organism in the autogenous vaccine. If on the contrary the non-specific vaccine was without effect and the autogenous produced great improvement, one might take that as evidence that the organism in the autogenous vaccine stood in causal relationship to the lesion.

Dr. GRAHAM LITTLE showed a case of *Adenoma sebaceum*. Patient, a girl, aged 13 years. She had had the eruption since early childhood, and at present the characteristic semitranslucent small tumours were thickly distributed about the cheeks, in the sulcus between the cheek and nose, and on the nose. The majority of the lesions were of the red type ("Type Pringle" of French authors), but there were also several quite pale tumours (Balzer's type). In addition there were several soft fibrous pad-like colourless patches on the skin over the sacrum. The child was a particularly bright, clever and successful student; there were three other children, who were normal.

Dr. J. H. SEQUEIRA showed a case of *congenital hypertrichosis*. Patient, a girl, aged $2\frac{1}{2}$ years, the youngest of five. The other children showed no abnormality. The child was born at full term, the first teeth appeared at eight months, and she walked at eighteen months.

The face was covered with fine downy hair, chiefly fair, in some parts a quarter of an inch in length. The body was covered with longer darker hair, and there was a similar growth on the limbs. The palms and soles and the flexures were free.

In 1909* the exhibitor showed a parallel case to this infant. It was a curious coincidence that this child, like the one previously shown, was born in Canada of English parents.

The PRESIDENT said a slight degree of the condition was very common in children apart from tubercle. It usually disappeared at puberty, when the ovarian secretions became effective. He believed this condition was never seen in the male. Acquired hirsuties due to tubercle occurred in both sexes, but even this was more common in the female.

Dr. J. H. STOWERS showed *photographs of an extensive and severe case of tuberculosis of the skin successfully treated by means of picric-brass preparations combined with heliotherapy*. The patient, a male, born in September, 1911, developed the disease in his fifth year. When seen in March, 1919, three years later, the whole of the right cheek was affected up to the margin of the lower eyelid, the entire nose being also involved. The integument was very vascular and œdematous, and covered with thick septic crusts under which distinct nodules were visible. As surgical treatment was contra-indicated, the patient was admitted into the Alton Hospital, Hampshire, under the personal care of the Medical Superintendent, Sir Henry Gauvain, who directed the treatment of the case. He remained in the Institution for eighteen months, and was discharged in November of last year practically cured.

The PRESIDENT said this subject had been thoroughly discussed by the Section on a previous occasion, and the treatment had disappointed many of the more experienced members. The type of tubercle the present patient had was the characteristic ulcerating tuberculosis, which was curable by many methods not more destructive than brass paste. The method described by Dr. Stowers was useless for apple-jelly lupus. He regarded this as a treatment which had been tried and found wanting, and considered that it might be discarded.

Dr. H. W. BARBER showed a case of *Epidermolysis bullosa*. Patient, a male, aged 9 years. The chief point of interest about this boy's case was the family history. He had been able to trace twenty-two affected members of the family. In the present generation two boys

* *Brit. Journ. Derm.*, 1909, xxi, p. 58.

and two girls were affected, and it was transmitted to them by the father, from whom it went back to the grandmother's father.

Dr. H. W. BARBER showed a case for diagnosis. Patient, a female, aged 42 years. In August last the patient had what she thought was a bite on the left cheek, and the condition gradually spread. He felt inclined to agree with those who thought it was sclerodermia. His first impulse was to regard it as an unusual case of the Granuloma annulare group.

Dr. J. H. SEQUEIRA showed a case of so-called *multiple idiopathic pigment sarcoma* (Kaposi). Patient a male, of English birth and parentage, aged 55 years. In 1911 he was operated on for obstruction of the common bile-duct. There was no history of venereal disease, but the Wassermann reaction was positive. In 1919 the patient noticed what he thought was a bruise on the left great toe, on the dorsal surface at the base of the nail. This lesion had not disappeared, but had become hard and "like a corn." Twelve months ago a purplish raised lesion the size of a threepenny-piece appeared on the left calf, and four months later a similar spot developed on the left upper arm. A month ago a purple raised spot of similar size appeared at the end of the right great toe. On the right half of the soft palate there was a circular purplish spot the size of a sixpence. It was stated that this was observed about the time of the appearance of the first spot on the toe. The most characteristic lesion was that on the dorsal aspect of the great toe. It was raised, purplish-brown in colour and with a warty surface, and the size of a thumb-nail. The other lesions were flat, purplish plaques, the colour of which did not disappear on pressure. Two of the lesions (on the arm and leg) were excised and sent to Prof. Turnbull for report. The following was the abstract of the report: "Richly pigmented (iron) angiomatous granuloma. The histological changes are similar in kind though much greater in degree to those found in lesions sent to us as "Kaposi's multiple idiopathic pigment sarcoma."

The case was shown because of the apparent metastatic lesions on the limbs and palate.

Dr. S. E. DORE showed a case of *Lichen planus* in a woman, aged 47 years. Patient stated that she had had the eruption forty-one

years, and was previously under the care of Mr. William Anderson and Dr. Stainer, at St. Thomas's Hospital. During this period she had had fresh outbreaks from time to time, the last one being about a year ago. The eruption consisted of pink or crimson papules, mixed with excoriations and scars, the lesions having a linear arrangement running parallel to the long axis of the limb. There were also some larger excoriated areas covered with crusts evidently due to scratching. The anterior surfaces of both legs from the knees to the ankles were chiefly affected, but there were some papules on the dorsal surfaces of the feet and also on the right thigh above the knee, where the lesions were also distributed in parallel lines. The fact that the patient was alcoholic no doubt partly accounted for the large number of excoriations and scars. The long duration did not necessarily exclude Lichen planus, and was no doubt accounted for by a large number of successive attacks or exacerbations of the eruption. He had recently seen a case in which a patient, aged 80 years, had had more than twenty attacks of Lichen planus extending over sixty years. He thought the case was one of Lichen planus rather than of linear nævus—a diagnosis which had also been made.

Dr. S. E. DORE showed a case of *peculiar scarring following comedo*. Patient, a girl, aged 19 years, presented numerous small deep scars scattered sparsely over the nose and cheeks, of varying size and depth, some of them being triangular or irregular in shape. There were also a few comedones, and the scars appeared to be the result of atrophy round a comedo without any intermediate stage of inflammation or suppuration. Patient had been under observation for some years, and no papules or pustules had ever been seen. On the right side of the neck there was a large irregular scar said to have been the result of an abscess. The patient suffered from a mild but well-marked degree of ichthyosis which might have influenced the scarring, and there was also well-marked scaliness of the scalp and oily seborrhœa of the face. The scarring was not of the close, pitted, cribriform variety described by French and American authors.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

TWO CASES OF ACNE WITH A RATHER UNUSUAL ÆTIOLOGY.

K. HÜBSCHMANN. (*Ceski Dermatologie*, 1920, i, No. 5.)

THE relation of acne to digestive disturbances is well established. Constipation especially plays an important part. It is well known, however, that regulation of diet and catharsis have little influence on most cases. It is necessary to eliminate the cause of constipation.

Case No. 1 illustrates the clinical course and effect of treatment on a severe case of Acne indurata, and a definite improvement from the time when gastric hypoacidity was diagnosed and regulated. The stools also became normal.

Case No. 2 is one of marked Acne vulgaris responding promptly to treatment after dental caries has been remedied.

SPINKA (St. Louis).

PITYRIASIS ROSEA AND ITS RELATION TO TUBERCULOSIS.

R. EISELT. (*Ceski Dermatologie*, 1920, i, No. 5.)

THE occurrence of Pityriasis rosea among tuberculous patients is relatively infrequent. Its appearance has a bad prognostic significance. French authors consider pityriasis rosea a systemic disease related to arthritic and gastric disturbances, while the Germans consider it as a trichophytia. Damary and others believe that Pityriasis rosea is the result of bacterial intoxication, *i.e.* with the toxins of tubercle bacilli.

The author describes two cases of Pityriasis rosea with manifest tuberculous but in good general condition, in whom the tuberculosis assumed a malignant character after the appearance of the eruption and ended fatally.

Damary considers the appearance of a Pityriasis rosea after injection of tuberculin as a reaction analogous to Herxheimer reaction in syphilis.

SPINKA (St. Louis).

PITYRIASIS RUBRA PILARIS. V. SVESTKA. (*Ceski Dermatologie*, 1920, i, No. 5.)

THE author considers Pityriasis rubra pilaris as a definite dermatological entity and not a disease of the lichen group. His case, in a woman aged 40 years, with negative findings otherwise, shows a well-established clinical picture.

The author considers a disturbance of internal secretions as the possible ætiologic factor. The article is illustrated by three microphotographs of sections from involved skin.

SPINKA (St. Louis).

PATHOLOGY.

THE APPLICATION OF CUTANEOUS SENSITISATION TO DISEASES OF THE SKIN. M. F. ENGMAN and W. G. WANDER.

(*Arch. of Derm. and Syph.*, 1921, iii, p. 223.)

THIS paper deals with the relative cutaneous reactions to various proteins of certain diseases, such as urticaria, Erythema multiforme, pemphigus, eczema, etc. The protein products were obtained from various well-known makers and were proved to be reliable. In each case a careful history was taken to find out if there were any apparent relation to food, such as an exacerbation following the ingestion of a certain food; if the history were negative such food proteins

were tested as wheat, milk, egg, beef, pork, etc. Tests were made also with a variety of bacterial proteins and with certain pollens.

The tests were performed uniformly on the inner surface of the forearm. Small incisions about $\frac{1}{4}$ in. long were made through the epidermis, a sharp von Pirquet scarifier with a semicircular tipped blade being used, as it produced little traumatism in making the incision, which was important, as the dermographic or urticarial tendency of some patients is so marked by traumatism as to interfere with the development of positive reactions. Cleaning the surface of the arm with antiseptics was avoided, as the friction and the antiseptic combined tended to mask the local reaction. The incisions were placed about 1 in. apart: each was moistened with a drop of $\frac{1}{10}$ normal sodium hydroxide solution, to which was at once added a minute quantity of the protein to be tested; half an hour was allowed for the development of the full reaction, but it was often manifest in a few minutes.

The results showed that in urticaria 79 per cent. showed a positive sensitisation; in infantile eczema, 78 per cent.; in chronic generalised eczema, 38 per cent.; while in such diseases as Dermatitis herpetiformis, Erythema multiforme, Lichen urticatus and pemphigus the percentage was negligible.

The writers consider these tests to be of inestimable value as a diagnostic and therapeutic measure in the study and care of urticaria, eczema, etc., and believe that de-sensitisation has a great future in the treatment of such cutaneous diseases, as they found that in the instances in which they could exercise control of the diet so as to exclude the offending protein excellent results followed, and that when de-sensitisation was possible a diet containing such protein in many cases might be resumed

J. M. H. M.

ÆTIOLOGY OF SARCOIDS OF BOECK-DARIER. B. REJSEK. (*Ceski Dermatologie*, 1920, i, No. 5.)

THE majority of dermatologists believe that sarcoids or so-called tuberculides appear in persons suffering from manifest or latent tuberculosis. Tuberculides are caused either by the action of toxins (toxic theory), or by bacilli brought to the skin by the blood-current, or introduced into the skin from without (bacillary theory). Bacilli lodging in the skin are either usually dead or incapable of multiplication. Very rarely they reach the skin alive, and in that case cause genuine tuberculosis of the skin with positive findings of the organisms in the sections.

The author believes that the blood of the patient suffering from latent or manifest tuberculosis always contains a certain number of toxins, which may vary from time to time. If the variation takes place gradually the skin has time to adjust itself, while at the same time it becomes hypersensitive to all other conditions. If the concentration of toxins increases suddenly, a reaction takes place with the formation of some form of tuberculide without the direct action of the tubercle bacillus. Different types of tuberculides can appear at the same time. The number of lesions depends on the number of toxins produced above the tolerated concentration. The author's case illustrates the simultaneous appearance of Lichen scrofulosorum on the face and miliary lupoids of Boeck-Darier on the body in a woman patient with active pulmonary tuberculosis. The article contains a detailed description of lesions with histological findings.

SPINKA (St. Louis).

EOSINOPHILIA AND ITS RELATION TO SKIN-DISEASES.

V. SVESTKA. (*Ceská Dermatologie*, 1919, i, Nos. 3-4.)

THE first part of the paper dissects the phenomenon of eosinophilia in general, its relation to infections and anaphylaxis. It reviews the theories about the origin of eosinophilia from the bone-marrow and possible transformation of neutrophiles into eosinophiles. The author believes in the possibility of extra-medullary origin of eosinophiles and in local histogenesis of eosinophilic cells in the skin and mucous membranes.

Svestka studied ten cases of scabies in regard to blood changes and tabulated his results. The untreated cases show a high degree of eosinophilia (31.05 per cent. in Case No. 1). The number of eosinophilia cells decreased rapidly under treatment. Eosinophilia results from the irritation of the organism by toxic products of the vital activity of parasites, and will increase in proportion to their activity; it is independent of skin findings.

A high degree of eosinophilia was found in Dermatitis herpetiformis (58 per cent.). At a certain stage of development the bullous lesions show eosinophile cells only; later neutrophilic leucocytes and lymphocytes also make their appearance. There is a direct relation between the temperature and blood eosinophilia, which is the highest at the height of fever.

SPINKA (St. Louis).

REVIEW.

SYPHILIS UND NERVENSYSTEM: EIN HANDBUCH IN ZWANZIG VORLESUNGEN FÜR PRAKTISCHE ÄRZTE, NEUROLOGEN UND SYPHILIDOLOGEN.*

NONNE's comprehensive text-book on syphilis of the nervous system has been the standard book of reference on the subject since its first appearance, and in the present edition it has been brought fully up to date. As our knowledge of syphilis advances fresh problems constantly arise for solution, and in so far as these have reference to the nervous system, Nonne gives admirable critical analyses of recent observations and theories.

These have clearly all the greater value, coming from a neurologist with an extensive experience of other affections of the nervous system than those due to syphilis. Indeed, as much current literature shows, under no other conditions can a sound and balanced account of the pathology and symptomatology of a single form of infection of the nervous system be produced. It has always been assumed that syphilis as it affects the nervous system presented certain peculiar and obscure features not seen when other organs in the body are involved. In a measure this is undoubtedly true, but some of this exclusiveness, at least, owes its origin to the extremely limited and special interests of those who have laboured at the subject. As far as it is possible to be free from the limitations of the specialist, Nonne may be considered to enjoy such a general outlook as is essential in dealing with a disease so protean in its manifestations as syphilis.

**Syphilis und Nervensystem: Ein Handbuch in zwanzig Vorlesungen für praktische Ärzte, Neurologen und Syphilidologen.* By MAX NONNE. Fourth, revised and enlarged edition. Pp. 1019. Berlin, S. Karger, 1921.

In this connection his views on the pathology of nervous syphilis are of particular interest. There has been somewhat of a revolt recently by French observers against the view that the syphilitic process in the nervous system differs essentially from syphilitic processes elsewhere in the body. According to them, even in the case of such diseases as tabes and general paralysis, there is no primary parenchymatous syphilis, but here, as in the admittedly meningo-vascular forms of the affection, vascular and meningeal lesions precede and give rise to the degenerative processes in the nervous elements. How else, they ask, could the spirochæte reach the substance of the nervous system, except through the blood-vessels? And why in tabes and general paralysis alone of all forms of syphilis should this passage of the organism and its virus leave no trace behind it and give rise to no reaction in the vessels? Nonne adheres to the older views that there are meningo-vascular and parenchymatous forms of syphilis of the nervous system. He classifies the forms of involvement of the nervous system as follows: Syphilitic new growth (gumma), chronic proliferative inflammatory lesions, primary lesions of the vessels, all of which have their seat in the meninges, and finally, primary parenchymatous degeneration of the nerve cells and fibres. The last form may appear as an encephalitis, as a sclerosis or as a primary atrophy. Commonly all these processes are present together in varying degree. Further, on the one hand, lesions of the meninges may secondarily and purely mechanically involve the vessels, and thus interfere with the nutrition of the nervous tissues supplied, while, on the other, primary vascular lesions in turn produce disorders of blood supply and of nutrition in the nervous system.

In an interesting discussion, which embraces the recent work of Levaditi and Marie on the supposed "virus dermatrope" and "virus neurotrope," on the question of special forms of syphilis, Nonne concludes that although no final expression of opinion is yet possible, the weight of both clinical and experimental evidence is in favour of the view that there is a special form of virus which is neurotropic.

His account of the symptomatology of nervous syphilis calls for no notice beyond the statement that it is exhaustive and admirable in matter and arrangement.

Complete details are given of the various methods of treatment and of the particular indications for them. Within the limits of a short review no adequate account can be given of this section, which should be consulted in the original by those interested.

ČESKÁ DERMATOLOGIE.

In this number we publish some abstracts from *Česká Dermatologie*, which first appeared in the autumn of 1919. It is published monthly (except in July and August) at Prague, Czecho-Slovakia, and is edited by Prof. Dr. Fr. Samberger and Dr. A. Trýb. It expresses the views on skin and venereal diseases held at the Bohemian Dermatological Clinic of Prague, and publishes the work of leading men from Czecho-Slovakia. Dr. Spinka, of St. Louis, has kindly agreed to send us abstracts from time to time.

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FOCAL INFECTION.

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PART II.

THE doctrine of focal infection, in one sense, is an old and well-established one. It has long been known that a syphilitic chancre is followed by systemic infection, and that a septic wound may be followed by septicaemia, that a streptococcal sore throat may be followed by pneumonia and endocarditis, and these are true examples of focal infection. With increased knowledge of bacteriology the same strain of organisms has been identified through all stages of these diseases. But in recent years the doctrine has been expanded so as to include many diseases, some acute, some chronic, all of them non-contagious, and which at first sight show neither clinical nor pathological likeness to the parent focal infection.

The medical literature of to-day abounds with the reports of cases in which the surgical removal of an organ or part of an organ has been followed by the disappearance of a group of morbid symptoms affecting remote tissues. In 1913 Sir Arbuthnot Lane ⁽¹⁾ reported seventeen cases in which chronic and progressive ill-health had been cured by the operation of colectomy or ileo-colostomy, and on this clinical experience he has founded his doctrine of auto-intoxication following chronic intestinal stasis.

Again, groups of morbid symptoms presenting no aetiological or pathological relationship have been recorded as disappearing spontaneously after the operation of tonsillectomy. Cases have been recorded in which myalgia, fever, chronic headache, general severe anæmia, albuminuria, etc., have rapidly disappeared after tonsillectomy. To these we can now add Lupus erythematosus, Alopecia areata, Lichen planus, prurigo.⁽²⁾ Whitfield⁽³⁾ in his recent Lunnleian Lectures, records the disappearance of Lupus erythematosus after the extraction of teeth. Even the ancient practice of acupuncture as practised by the Chinese doctors appears to have been followed by rapid cures even in acute infectious diseases, and M. Bonnier has treated all sorts of infirmities and chronic diseases (deafness, asthma, certain dermatoses and gastro-intestinal troubles) by galvanocauterising certain points of the mucous membrane of the nasal fossæ. To these we may add the remarkable phenomenon familiar to all operating surgeons, namely, the disappearance of tubercular growths in the abdomen which sometimes follows simple laparotomy.

The analysis of these clinical phenomena shows that the factors involved are extremely complex. I propose in the present paper to gather together such of the biological data connected with focal infection that I am acquainted with; to trace events step by step, beginning with the bacterial collections on the surfaces and ending with the terminal result, which is some perversion of nutrition. There are many gaps where positive data, or my ignorance of them, may fail, but the story, imperfect as it is, may clarify thought and stimulate work.

I.

BACTERIAL FOCI ON THE ENTERO-CUTANEOUS SURFACE.

Mechanical conditions are of prime importance in determining these bacterial collections. Any anatomical arrangement which favours stasis, such as pockets, troughs or follicles, sooner or later becomes a bacterial focus. It will be convenient to begin with the skin, or visible surface. The follicles at birth are sterile, but at puberty and onwards the vestibules normally show bacterial collections. The common bacterial inhabitants of the vestibules are the micro-bacillus and the *Staphylococcus albus*, both saprophytic and facultative parasites. At puberty, under the influence of alimentary

and endocrinal hormones, they may exhibit a low degree of virulence. Their virulence is also increased by intestinal stasis. When activated they give rise to local lesions, but never, so far as I know, to systemic infection nor to heterotopic infections of a character different from the focal lesion.

The *fissure* is not infrequently a focal infection, and may be followed by systemic infection and even fatal consequences. I can recall the case of a woman suffering from pneumonia secondary to a fissure between the toes, and it was only at the autopsy that the connection was discovered. The simplest example of a cutaneous focal infection, as this is commonly understood, is a septic wound followed by septicæmia. Other instances will readily occur to the reader, such as the common boil, anthrax, glanders, the chancre, all of which begin as focal infections, and give rise to systemic infection by the spread of bacteria or spirochaetes from the primary infection through the blood to the tissues of the body.

In the *mouth*, the first bacterial collection is found in the dental trough—a normal pocket, situated at the entrance to all the dental alveoli. These pockets become infected at a comparatively early age and are the starting-point of pyorrhœa. In advanced pyorrhœa with apical trouble the alveolus may become a focus of autolysis and bacteriolysis, the split products leading to softening and necrosis of the periodental membrane and cementum which form the walls of the alveoli. Numerous cases are on record of systemic infections secondary to these dental foci. The bacteria which are commonly found here are the staphylococcal, the streptococcal and pneumococcal. The discovery of the protozoic endamœbæ in connection with pyorrhœa raises many interesting points. Its relation to pyorrhœa has been worked out by F. M. Barrett (⁴), A. J. Smith (⁵), C. C. Bass and F. M. John(⁶). The exact part played by endamœbæ has not yet been determined. They are thought to play some part in focal bacteriolysis.

The tonsils and lymphoid tissue of the naso-pharynx afford ample opportunity for bacteriostasis; the tonsillar crypts vary in different individuals, but are never completely absent. It is important to be acquainted with their anatomical character, for this must be considered in relation to the focal and remote processes. They are true invaginations of the surface, and are completely lined

by keratinised stratified epithelium, which separates them from the blood-stream. They must, therefore, be regarded as external extravascular crypts. The character of the epithelium is significant, for in the human body we never found keratinised stratified epithelium except in situations which are liable to friction and pressure. The presence of keratin shows, further, that the intact tonsillar crypts are not absorptive organs.

A large volume of work exists on the bacteriology of the tonsils and lymphoid tissues of the throat, as a result of which it would appear that a sterile tonsil, except at birth, has never been found. Cryptic collections of bacteria in the tonsils may be regarded as a normal event, and *is not by itself to be regarded as evidence of infection.*

Excellent work on the tonsils in relation to the infectious processes has been carried out by Dr. D. J. Davis (?), of Chicago. He has shown that the flora of the tonsils is a highly specialised one, restricted quite definitely to a few varieties. The hæmolytic streptococci are more numerous in the crypts, while *Streptococcus viridans* and pneumococci are more abundant on the surface. Other organisms, *e.g.* *B. prodigiosus*, *B. pyocyaneus*, *B. coli*, when experimentally injected into the tonsillar crypts, failed to grow and soon died out (Sexsmith). Tubercle bacilli are occasional inhabitants of the tonsils, and they probably are derived from milk from tuberculous cows.

Davis has drawn attention to an interesting point in connection with the distribution of lymphoid tissue in the throat and gastrointestinal canal in relation to the bacterial flora. The lymphoid tissue is formed abundantly in two localities—in the region of the throat and in the lower intestine especially about the ileo-cæcal sphincter and the appendix, and around these localities we have clusters of lymph-nodes and lymph-glands. Between these localities the lymphoid tissue is irregularly and sparsely distributed. The greatest number and variety of bacteria in the whole intestinal tract corresponds with the increase in the lymphoid tissue. In these two localities not only is the normal bacterial flora more highly developed but here occurs the greatest number of infections: in the throat streptococcal, pneumococcal, meningococcal, staphylococcal infections, and the viruses of numerous exanthems and other diseases; in the lower intestines typhoid, paratyphoid, dysenteries,

tuberculosis, appendicitis, etc.; in the intervening localities few infections occur.

Davis has examined bacteriologically and microscopically a very large number of tonsils from individuals of all ages from birth to eighty years of age, some in good health, and others suffering from chronic joint affections, nephritis, endocarditis, rheumatic fever, recurring tonsillitis, etc. *Streptococcus pyogenes* has been noted as early as ten hours after birth. The flora of the infant mouth is largely streptococcal. The pathological histology of the tonsils containing haemolytic streptococci was worked out in 1920 independently by E. Kellert ⁽⁵⁾ and D. J. Davis ⁽⁷⁾. Kellert's observation that the bacteria were confined to the crypts while none were found in the lymphoid tissue has been confirmed by others: "In many tonsils, although the crypts may contain masses of bacteria, prolonged examination after staining by the Gram-Weigert method showed no bacteria in the lymphoid tissue." He found, however, that nearly all of the seventy pairs of tonsils examined showed inflammatory changes suggestive of infection. The dissolution of the dead bacteria in the crypts is followed by consequences both local and remote, and how far-reaching are those remote events we shall see when we come to the question of cytolysis and bacteriolysis. But the local event is one fraught with great danger to the individual, namely the rupture of the keratinised wall of the crypt; when this is affected the crypt ceases to be an external extra-vascular cavity, and becomes a portal of entry for hæmatogenous infection.

Davis has drawn special attention to the plasma-cells in tonsils. He failed to find them in the tonsil of the foetus or of the newborn. They make their appearance regularly about the second or third week, and are always found thereafter. In children several months old they are constantly found, usually in abundance. They are present throughout life and even to very old age (eighty years), regardless of the anatomical condition of the tonsil, and in hypertrophied tonsils they are very numerous. In the alimentary canal the plasma-cells were found by Davis to be situated under the mucosa, and they were specially numerous in the region of the lymphoid follicles. The plasma-cells, generally speaking, are regarded by pathologists as indicative of chronic inflammation or irritation, but their early advent in the tonsils suggests some function not yet explained.

The streptococci in relation to infection.—Before we proceed further with the story of focal infection I must make a digression with the view of attempting to remove some of the confusion which still prevails regarding the classification of the streptococci.

An army of research workers, led by the Chicago School, has brought to light a large number of different strains of streptococci, which vary from each other not only culturally, but also with regard to agglutination and bactericidal reactions. The blood-agar plate method of Schottmüller and the carbohydrate tests of Gordon have served to differentiate these strains into two main divisions of hæmolytic and non-hæmolytic, while the carbohydrate test elicits the fact that some streptococci, like the *S. buccalis*, will ferment lactose but not mannite, that some will ferment dextrine but not raffinose or inulin, and, in contrast to this, that the *Streptococcus faecalis* will ferment mannite. The non-hæmolytic streptococci are further distinguished by the property of forming pigment (usually green) on blood-agar, and exhibit the power of converting hæmoglobin into methæmoglobin.

At first sight it would seem that these biochemical reactions might serve as a basis for classification. But the newer bacteriology which has issued from the laboratory of Edward C. Rosenow, as the fruit of a vast amount of research, has entirely discredited any such attempt. Indeed, so far back as 1917 Kinsella, Swift ⁽⁹⁾ and Blake ⁽¹⁰⁾ had come to this conclusion—that the bases of morphology and carbohydrate reactions would have to be abandoned. In the words of Blake, “the ultimate goal to be attained is a classification founded upon an immunological basis, and at present such a classification is unavailable.” But the subject is still more complicated by the discovery of E. C. Rosenow ⁽¹¹⁾ that the various types of streptococci (*viridans* and *hæmolyans* and pneumococci) are not constant in their properties, but are transmutable, the one into the other. Rosenow’s contribution receives support from the observations of Haessli ⁽¹²⁾, that the passage of *S. viridans* several times through horse-serum caused it to lose its pigment-producing character and to acquire the property of hæmolysing red blood-corpuscles. The researches of E. C. Rosenow in conjunction with the clinical work of Dr. Frank Billings and his collaborators is of great significance. It is not too much to say that it forms an era in the history of pathology, for

it opens a new avenue of research which will be found to converge, and finally meet those lines of investigation which have been followed for some thirty years by Adami in his doctrine of subinfection. Dr. Billings is inclined to the belief that transmutation from one strain to another takes place within the primary focus, and that the oxygen tension within the focus and surrounding tissues seems to be an important factor in the mutability of bacteria. In consequence of this mutability the bacterium may be converted into a joint-attacking organism, or into one with special affinity for muscle, including the myocardium; or into one which has special affinity for fibrous tissue, producing rheumatoid symptoms when it attacks the tendons and aponeuroses; or it may acquire affinity for mucous membrane, which may result in a peptic ulcer, or for skin, where it may manifest its activity as Erythema nodosum. Future work must decide whether the grounds of this great generalisation are scientifically and logically sound, but the evidence at one's disposal finally disposes of the idea that forms, colour and cultural characters generally are trustworthy grounds for differentiating the bacteria. The terms "longus," "brevis," "conglomeratus" are now considered as descriptive merely of growth-phenomena and not of fundamental properties.

II.

THE BACTERIAL DISTRIBUTION ALONG THE GASTRO-ENTERIC SURFACE; BACTERIAL MIGRATION INTO THE INTERIOR.

Prof. Keith (¹³) has shown us that with the evolution of the terrestrial Vertebrates there came into operation a new form of digestion, through the agency of bacteria and fermentation, and with the need of this arose the corresponding structure of the Great Bowel. The aliment which has resisted juice digestion in the higher intestines is split up into simpler compounds by bacterial agency. The flora of the intestine is therefore to be regarded as part of the economy of the body, and the cultivation of streptococci from the faeces, taken by itself, has no pathological significance. Of the two main groups of bacteria, *B. coli* and Streptococci, the former is dominant, forming in normal faeces about 90 per cent. of the bacterial flora. A marked alteration in the *ratio* of these two groups in the faeces would be evidence of an abnormal juice digestion, but not necessarily of infectivity. Of the factors which favour streptococcal

growth in the intestine Match ⁽¹⁴⁾ lays most stress on ileal stasis, and secondly, on "deficient assimilation of food in the upper parts of the digestive tract." The streptococci have need of a nutritive substratum richer in protein and carbohydrates than the hardier *B. coli*, and if the ileal effluent is richer in albuminoid matter than normal, owing to incomplete digestion, then the ratio of streptococci to *B. coli* will increase. In respect of stasis we have direct experimental evidence that the contents of loops of the higher intestine cut off from the alimentary tract but left *in situ* rapidly becomes toxic. In a paper published in 1917 by D. M. Davis and H. B. Stone ⁽¹⁵⁾ this toxicity was shown to depend on bacterial growth and not on toxins derived from the mucosa. The hæmolytic streptococci which pass from the mouth to the stomach are destroyed by gastric juice of normal acidity.

Oppenheim ⁽¹⁶⁾ has shown that hæmolytic streptococci are only exceptionally found in the fæces of normal healthy people, and they may be biochemically distinguished by their power to ferment mannite. The presence of hæmolytic streptococci in the fæces may be taken as evidence of the existence of hypochlorhydria. At the normal speed at which the chyme passes through the duodenum, but few bacteria are found in this situation, and it is not till we reach the lower ileum near the sphincter that bacteria are found in considerable quantities. Their true habitat is in the great bowel, and their maximum is reached in the rectum, for it is calculated that one-quarter to one-third of the total solids of the healthy fæces consists of bacteria, mostly dead.

Migration of bacteria into the interior.—Lister's view that the organs of the body are sterile is no longer tenable in the strict bacteriological sense. In the late eighties Sir Armand Ruffer, under the leadership of Metchnikoff, had demonstrated the passage of leucocytes and bacteria from the intestinal surface through the mucous membrane, and had shown the presence of bacteria in the tonsils and lymphoid tissue of the intestines. Adami ⁽¹⁷⁾ had by this time conceived the idea of subinfection, in which he maintained that tissues are "potentially and not essentially sterile," that bacteria are constantly throughout life passing through the mucous membrane into the underlying lymph- and blood-vessels, and are liable to be carried to distant parts, either to be rapidly destroyed

or, under different conditions, either to set up active bacterial disease in remote organs, or to pass into the state of subinfection. Further evidence in support of this contention may be found in the post-mortem room. Kretz ⁽¹⁸⁾ records 600 autopsies in which he was able to demonstrate streptococci in the lymph-glands of 90 per cent. of the bodies examined. The extreme frequency of tubercular focal lesions was shown by Nægeli ⁽¹⁹⁾, of Zurich, in a series of post-mortem examinations, for between the ages of eighteen and thirty he found no fewer than 96 per cent. that showed evidence that tubercle bacilli had been carried into the interior tissues. Still further experimental evidence was brought forward in 1914 by Edward C. Rosenow ⁽²⁰⁾, who by a special technique, under the strictest asepsis, obtained emulsions of tissues, and was able to demonstrate bacteria in organs which to ordinary methods appeared to be sterile. Taking all the evidence at our disposal, Adami's contention that normal tissues are potentially and not essentially sterile may be considered as fairly well established, together with the doctrine of sub-infection which springs from it. As the phenomena of autolysis form an essential part of subinfection processes, we must leave no doubt in the reader's mind of what exactly is the meaning of *subinfection*.

And to begin with, to quote Dr. Adami ⁽²¹⁾, "*Subinfection* is not to be confused with '*latent infection*' of wounds in the sense in which this term is used by Sir Kenneth Goadby, in which we have to deal with the late resultant of a previous acute infection due to the persistence within the tissues, in a latent state, of certain of the bacteria which had set up that earlier acute infection. Now through some irritation of the part, or lowered resistance there, these bacteria resume active growth, flare up and induce a renewed period of active disease. By subinfection I mean something quite different. . . . There is in this process . . . no necessary multiplication of the bacteria within the system, but on the contrary destruction of bacteria. It is this process of destruction, with the coincident liberation of the toxins, that sets up a series of degenerative and necrotic processes in the cells in the area immediately around those cells (through diffusion of the toxins)."

This, then, is the meaning of subinfection as understood by Dr. Adami. We have to deal with a smaller or larger cryptic collection of bacteria, it may be in the oral alveolar pockets, in the tonsillar

crypts, in the folds or crypt-like depressions of post-nasal "adenoids," in the lymph-nodes of the ileum, in the subcutaneous or mesenteric lymph-glands, in the capillaries of any of the internal organs, in the bile-duct, in the genito-urinary tract. There is no multiplication of bacteria, no active infection in the ordinary sense of the word, and yet we have abundant clinical evidence that these cryptic bacteria are the cause of diverse chronic diseases.

It follows as a logical consequence that the old definition of Focal Infection can no longer embrace all the phenomena which transpire within these bacterial foci. In short we have to do with two different orders of events: first that in which bacteria are transmitted from the focus by the blood-stream to remote organs and there to give rise to groups of pathological symptoms; and a second order in which the cryptic bacteria remain *in situ*, break up under the leucocytic enzymes when their albumins or albumin-toxins alone are discharged into the blood-stream, there to evoke changes whose end-result is some slow evolving disease in some remote organ. The first order of events probably only takes place in the acute infections, such as pneumonia or endocarditis following from infection of the mouth or throat with virulent *Streptococcus viridans*: the second order is that which more closely concerns us as dermatologists.

III.

THE TOXICITY OF THE ALIMENTARY CANAL.

The enzymatic processes of the stomach and higher intestines result in the progressive fractional splitting up of the complete protein molecules. As a general rule, as Wells tersely expresses it, "it has been observed that the first products of protein hydrolysis are the most toxic, and that with further cleavage the toxicity lessens and finally disappears." The peptones and proteoses introduced directly into the blood or tissues are toxic, but under normal conditions they are broken down in their passage through the intestinal wall. But if under abnormal conditions they should appear in the blood they would provoke anaphylactic symptoms rather than those of progressive degeneration. A great number of diseased conditions have been attributed to poisons of gastrointestinal origin, and according to Lane, during ileal stasis these

find their way into the blood and lead to slow progressive degeneration of all the tissues of the body. From the clinical point of view the hypothesis has much to commend it, but the biochemist affords little evidence in its support, so far, at least, as concerns the ptomaine product of putrefaction. So high an authority as H. G. Wells (²³) says, "we cannot say positively that any human disease is caused by the products of intestinal putrefaction, and with growing knowledge the importance ascribed to this source of disease is becoming steadily less."

This, of course, applies to the products of putrefaction brought about by the hydrolysis of the normal albumins, carbohydrates and fats, and is not intended to include foreign proteins which may be present in the food, nor any colloid which may spring from the autolysis of bacteria and cells, nor again the toxins of special pathogenic bacteria such as *B. botulinus*, *B. typhoid*, etc., the morbid effects of which are well known. However, the broad fact remains that one order of possible toxic substances, namely the products of disintegration of food-stuffs by the digestive juices and the bacterial ptomaine products are not normally to be regarded as sources of disease.

Passing to the great bowel we come now to an economic form of digestion which is affected at the expense of the enzymes of bacteria instead of the cells of the mucosa. Of the many toxic substances formed from putrefaction and fermentation only a comparative small number have been isolated and studied, and these are derived from the aromatic radicals of the protein molecule and from the amino-acids. The thought naturally occurs to one that these amino-acid compounds may be the main source of those cell depressors which lead the way to the evolution of chronic disease in various parts of the body. Metchnikoff believed that most of the manifestations of senility came from the putrefaction in the large bowel. Of the members of this group of amino-acid compounds are tryptophane and its derivatives, indol, skatol, phenol, and cresol, of which the best known is indol. Under normal conditions it would appear that only a minute quantity of indol is absorbed from the great bowel and this is oxidised in the liver, and then in combination with sulphuric acid is excreted by the kidneys as indican, where it is readily recognised by its striking colour. The quantity of urinary indican is usually taken as the

index of intestinal putrefaction. The toxicity of indol as determined by the direct experiment on man and animals seems to be relatively slight, yet Herter (²³) found that the administration to healthy men in quantities varying from 0.025 to 2 gm. per day produced frontal headache, irritability, insomnia and confusion, and, if long continued, neurasthenia.

Arthur Whitfield (²⁴), who has devoted special attention to urinary indican in various diseases, found "indican absent in every case in which there was no apparent reason in either the general or cutaneous condition of the patient to suggest a toxæmia." On the other hand he found it present "in low or high degree in the most diverse cases of cutaneous eruption." He frequently failed to detect it in the urine of patients in whom *à priori* one might have expected to find it. An interesting point is raised by Whitfield as to the occasional result of administering creasote to some psoriasis patients, namely the disappearances of both the eruption and the indican.*

So far, then, as the evidence goes we may regard indol as a potential toxin, its degree of toxicity depending on the functioning of the liver and the available supply of sulphuric acid. If both this and glycuronic acid, for which oxidised indol has affinity, fail, then unoxidised indol may circulate in the blood and exert its toxic depressing effects on the various tissues of the body. The consideration of the other aromatic compounds need not detain us; both skatol and phenol are partially detoxicated in the liver and excreted like indol in combination with sulphur.

Among the bases derived from the amino-acids Dr. Mutch (²⁵) attaches much importance to histamine (β -iminazolyl-ethylamine), which he maintains is not destroyed by the liver, and therefore produces general toxic symptoms. He has isolated an organism (the *Bacillus aminophilus*) from the static ileum of patients who have a subnormal blood-pressure, and which he regards as the agent which affects the conversion of histidine into histamine. But histamine has been shown by Abel to be widely distributed in all animal tissues, and he thinks that no inconsiderable amounts are taken in our food and formed in the intestines every day. It has been known to produce severe urticarial reactions when locally applied, but whether

* The appearance of indoxyl-glycuronate in the urine has been known to follow the therapeutic use of cresol, thymol and camphor.

its origin in the intestine is always due to the "*Bacillus aminophilus*" is open to question.

Two other sources of intestinal toxæmia have yet to be considered and that most briefly. First the *bacterial toxins*. Neither the *B. coli* group nor the group of the Streptococci produce recognisable soluble ectotoxins and no definite pathological symptoms can be attributed to them. On the other hand, the split products which are formed by autolysis or heterolysis, as a result of the enzyme action of leucocytes, are undoubtedly toxic, and will be again referred to under the head of autolysis. Another important source of intestinal toxins is to be found in infections and subinfections of the mucosa. When any part of the internal surface becomes damaged by stasis the intestinal bacteria enter the depressed area and assume the character of parasites, from which both local and far-reaching consequences result. But there is another class of poisons of enteral origin to which the thoughts of the biochemist have only recently been turned, and that is the foreign proteids which may be present in the food, and which, if they gain access to the blood, act as antigens and provoke certain reactions of immunity. I shall refer to this point again under the head of "Heterotopic Digestion."

IV.

CHRONIC TOXÆMIA FROM THE ENTRANCE INTO THE BLOOD OF PROTEIN SPLIT PRODUCTS OTHER THAN THOSE DERIVED FROM THE FOOD; HETEROTOPIC DIGESTION.

We have seen that the ptomaines which result from the putrefaction of foodstuffs and the soluble bacterial toxins do not under normal conditions give rise to any marked pathological symptoms, and yet, under the complicated environmental conditions of modern civilisation, the incidence of chronic toxæmia is of such high frequency that hardly a day passes without some example of it. Obviously we must look elsewhere for the source of these poisons, and this is to be found in any tissue of the body or in any focal collection of bacteria, where the cells or bacteria break up either under the enzymatic action of their own enzymes (autolysis or self-digestion) or of the enzymes of leucocytes (heterolysis). This field of research is busy with research workers and the harvest promises to be a rich one.

Practically every tissue of the body has been examined and the proteases or protein ferments (synthetic and analytic) are present in every cell in the body. These enzymes are delicately sensitive to their environmental conditions, especially to the presence of acids, which must be present before action can begin, while a very small excess of acid will arrest their action. This cell enzyme action which converts the insoluble nitrogen of the cell into soluble nitrogen is strictly comparable to the enzyme action of juice digestion. The proteases are similar to pepsin and trypsin, but the products of digestion are quite similar to those obtained by tryptic digestion. It is for this reason that I have used the expression *heterotopic digestion*, in order to emphasise its position in contradistinction to juice and bacterial digestion of the alimentary canal.

The influence of autolysis and heterolysis in pathological processes is seen in the action of enzymes on collections of pus, exudates, transudates, the dying cells of cancer, and tuberculosis, and on bacteria in any local bacterial infection during the stage of recovery.

It is a striking clinical fact that the bacterial infection of the tonsillar crypts and dental alveoli is not accompanied by any subjective sign of inflammation. The patients do not complain of sore throats or painful teeth—unless the dentine or pulp cavity should be affected. It was observed by D. J. Davis, during his researches on the tonsils, that except in acute infections, the cheesy and purulent-like material that exudes, on pressure from the tonsillar crypts is no more—indeed, is rather less apt to contain hæmolytic streptococci than the empty crypts, and he found that much of the fluid material expressed from the tonsils and commonly called “pus” is not purulent when examined microscopically. Davis’s conclusion, as expressed above, is not, of course, to be taken as universally true, but the evidence at our disposal points clearly to the fact that the oral and pharyngeal focal infections consist not in active inflammation, but in the breaking down of cells, bacteria and food material collected in the crypts, and are there to be regarded as foci of tryptoid heterotopic digestion which leads to ulceration of the crypt-wall and to the entrance into the blood-stream of minute quantities of “foreign” proteids, where they provoke a series of chemical immunity-anaphylactic reactions.

The researches of Vaughan ⁽²⁶⁾ have thrown much doubt on the

specific character of the bacterial endotoxins, and if his conclusions are verified it will lead to a complete change in our views of the chemical relation of bacteria to infection. According to Zinsser (²⁷) considerable experimental evidence has accumulated in favour of this point of view, which considers the toxic effects following upon the introduction of pathogenic bacteria into the animal body as due, not to endotoxins, but as rather the result of the action of toxic-cleavage products formed in the reaction between the blood-plasma and the bacterial cell. These split products Vaughan does not consider to be specific for individual bacteria, but may be formed from all bacterial proteins, both the pathogenic and the non-pathogenic, as well as from non-bacterial proteins. "The difference in pathogenicity," says Zinsser, "between bacteria of these two classes would then depend entirely upon their powers to invade, not at all upon their possession of individual peculiar cell poisons."

Vaughan's theory affords a rational explanation of the bacteriological fact that the most widely different dermatoses, such as Lupus erythematosus, Alopecia areata, Lichen planus and prurigo, etc., may be associated with the same tonsillar flora and *vice versâ*, that the same terminal result may be connected in some cases with one kind of tonsillar flora and in other cases with one of a different sort.

V.

IMMUNITY-ANAPHYLAXIS IN RELATION TO FOCAL INFECTION.

It is not germane to our present inquiry that we should involve ourselves in the maze of theoretical considerations relating to the complex phenomena of anaphylaxis, but the essential underlying principles embrace all the activities of focal infection, whether we understand by this term the actual migration of bacteria from the focus into the blood-stream, or the liberation of proteins and their split products from the area of subinfection. In either case we have to do with the entrance of a foreign protein (antigen) into the blood by an abnormal route and in an undigested form. The experimental introduction of a sublethal dose of foreign protein by a parenteral* route is followed by certain chemical reactions in the serum and cells

* "Parenteral," *i.e.* not through the alimentary canal but subcutaneously or intravenously.

of the body of the animal, which are manifested after a silent period of some eight to twelve days by sign of illness, or if the dose has been excessively small, by no symptoms at all. But the reintroduction of the same protein after the full incubation period into the same animal results either in a violent crisis in which all the pathological symptoms are exaggerated, or, if the dose be excessively small and repeated at short intervals, in a slow deterioration in the nutrition of the tissues of the body resulting in certain chronic diseases. This is the state of anaphylaxis or allergy by which it is understood that the animal has become sensitised to the particular protein.

The mechanism of anaphylatoxin formation is not yet understood, but there is much to be said in support of the contentions of Wells and Vaughan and Abderhalden, that "it is but an exaggeration of the normal processes of defence of the body against foreign proteins (including bacteria) by digestion. So abnormal is the parenteral introduction of foreign proteins that once this has happened the protective mechanism is stimulated to the production of large amounts of proteolytic substances, and on this account, if another quantity of the same protein is again parenterally introduced, the breaking down of the protein is extremely rapid." (28)

It does not appear to me unreasonable to assume that the antigens or foreign proteins may enter the blood from various sources, from a skin wound, from the respiratory passages, from autolytic foci of bacteria in the mouth or tonsils, from the mucosa of the intestines, from the lymph-nodes, or from any area of subinfection. Besredka has shown that antigens may be absorbed from the rectum of sensitive animals. Having entered the blood the antigens evoke a special defensive property of the cells of the body, resulting in the production of an enzyme-body (antibody ?), by whose agency the foreign protein is disintegrated. When the intake of focal antigens is continuous, as in tonsillar or ileal stasis, the continued demand for this special enzymatic activity of the cells leads to slow degenerative changes in the tissues. It is thus that we get the numerous and varied symptoms which Lane has enumerated in his doctrine of autointoxication following chronic intestinal stasis, and also certain cutaneous diseases.

Among the cutaneous reactions to this heterotopic digestion we may include Lupus erythematosus, Lichen planus, Alopecia areata,

prurigo, as well as the general changes, such as increased greasiness, melanoderma, the tendency to pyoderma, thickening and opacity of the skin, etc. Among the acute symptoms of heterotopic digestion we may include urticaria, and possibly angio-neurotic œdema.

VI.

THE MECHANISM OF RECOVERY.

If the mechanism of anaphylatoxin formation is obscure that of recovery is still more so. Of all the possible factors three have been submitted to prolonged investigation: (1) the activities of the blood-serum, (2) the phagocytes, and (3) the products of autolysis of leucocytes; and the relation of these factors to recovery has now been fairly well established.

The therapeutic immunisation of Wright and his followers rests on the threefold assumption, first, of the ætiological specificity of bacteria in relation to disease, secondly, that the injection of the killed organisms increases the bactericidal activities of the serum and leucocytes, and thirdly, that the immunity reactions are specific. But these assumptions are weakened when applied to focal infection in relation to chronic non-contagious diseases, by the discovery that streptococci and other bacteria are normal inhabitants of the mouth, throat and alimentary canal. And it is further weakened by the complete absence of evidence of the existence of any specific ætiological relationship between the streptococci in the tonsils, and the cutaneous diseases with which they are associated. No evidence is forthcoming to justify the assumption that Lupus erythematosus, Lichen planus, Alopecia areata or Prurigo are due to streptococcal infection in the sense that virulent bacteria are conveyed to the skin from the focal centre. An explanation more consistent with immunological experiments is that these and other chronic diseases arise from the defence-reactions which are evoked in the cells and fluids of the body when undigested proteins enter the blood. Among the many portals of entry of these undigested proteins the surface lymphoid tissue stands out prominently. And in this tissue is concentrated the processes of autolysis and heterolysis, so that the logical conclusion is that the primary causes of Lupus erythematosus, Alopecia areata, Lichen planus and prurigo is "subinfection" of the lymphoid tissue or other

surface tissue of the body, whereby undigested proteins gain access to the blood. The removal of the tonsils arrests the supply of foreign proteids at that one point, just as the operation of colectomy, by relieving the obstruction to the ideal effluent, may check the absorption of undigested proteins from the ileum. The surgical removal of the infected organ not only closes the portal to the protein irritant, but reflexly through the nerve centres may be conceived as evoking *reverse enzymatic processes*, whereby atrophy may be followed by hyperplasia, and *vice versâ* hyperplasia by atrophy.

Now under these conditions how are vaccines going to benefit the patient? I am not convinced of their efficacy. Controlled observations are necessary. In both the lichen planus and prurigo cases, reported in my previous paper, improvement set in before the vaccines were given. In a recent unpublished case of Lupus erythematosus I noted spontaneous improvement eleven days after tonsillectomy and the case is still under observation.

There is a marked disparity in the views of different clinicians as regards the value of vaccine treatment in connection with focal infection.

Dr. Frank Billings⁽³⁰⁾, after an exhaustive trial of vaccines, states that "the use of antigens in the form of dead bacteria injected subcutaneously is, in my experience, not justified. I have used them all, controlling the work with all the knowledge we have, using the antogenous and non-antogenous, the activated and the non-activated. The controls get along just as well as those that had the vaccines. If therapeutic immunisation rests on the specificity of bacterio-serum reactions, then the experience of Billings and his collaborators affords strong evidence of the non-specific character of focal infection.

Danysz⁽²⁹⁾, in his *Maladies chroniques non-contagieuses*, gives the result of his vaccine treatment of 260 cases, 38 of which he reports in detail; the patients were suffering from diseases which clinically and pathologically were extremely diverse. They included urticaria, eczema, psoriasis (25 cases), asthma, neurasthenia, sclerodermia, albuminuria, dysmenorrhœa, troubles of the menopause, colitis, enteritis, appendicitis, dyspepsia, constipation, neuroarthritis, rheumatism, etc., all of which he regards as manifestations of the anaphylactic state. The idea on which his therapeutic methods are

based is that under the influence of *emotion* the intestinal mucous membrane becomes permeable to certain of the split products of protein digestion which act as antigens, leading in time to various tissue degenerations. A vaccine is prepared from a mixture of the common saprophytic bacteria of the faeces in the proportions of their cultural twenty-four hours' growth on an ordinary agar-peptonised meat-broth medium. The bacteria were *B. coli*, 90 per cent.; enterococcus, 5 per cent.; an indefinite diplococcus, 3-4 per cent.; and a very small streptococcus, 1-2 per cent. The vaccines were made by the gravimetric method. The total quantities of dried bacteria injected in the form of an emulsion varied from $\frac{1}{100}$ mgrm. to 2 mgrm. The vaccines, whether they were administered hypodermically or by the mouth, and whether they were autogenous or heterogenous, were apparently equally effective. The therapeutic efficiency of this treatment in the 38 cases, as reported by Dr. Danysz, is unique, but it will need to be tested by many workers before we can satisfactorily estimate its true value. Of the 25 cases of psoriasis 12 were treated by autogenous vaccines, 9 by heterogenous, and 3 by intravenous injections of luargol; the results obtained in all these cases were practically identical. Danysz maintains that the entero-antigen method has yielded better results than all previous known methods. The vaccine treatment produced no change in the flora of the intestines, nor could any increase be detected in the agglutinins, or antibodies in the serum of the patients. Among the general reactions there was in some cases a temporary exacerbation of symptoms, but rapid improvement in the general health of the patients was generally observable. The local reactions varied from *nil* to local hyperæmia. In the face of this evidence it is difficult to admit a direct action of the bacterial protein on the lesions or on the flora of the intestines. We have seen the experimental evidence is accumulating in favour of the view of the non-specific nature of the bacterial "endotoxins," and that the toxic effects following their introduction into the body are the result of the protein cleavage of the foreign proteids. If this be true, then Danysz's vaccine treatment cannot be regarded as specific; the toxin which appears in the serum after the entrance of the antigen "seems to be the same, so far as we can analyse it by pharmacological methods, no matter what protein is used as antigen, or whether produced by

immune, or by non-specific reactions, or by chemical means such as that of Vaughan" (Wells).

The conclusion drawn by Danysz from his observations is that the bacterial vaccines owe their efficiency to their action on the cerebral nerve-centres, and that the clinical results obtained by bacteriotherapy and reflexotherapy are in their nature and mechanism essentially the same.

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ANETODERMA ERYTHEMATOSUM OF JADASSOHN.

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THE diagnosis of the following case described as Anetoderma erythematosum is based on the peculiar clinical and histological findings.

J. M. B—, aged 44 years; occupation, builder. The disease appeared six years ago. His father died at 65 and mother at 50 from causes unknown. So far as he is aware there is no tuberculosis in the family. He is married; his wife has had three living children and no miscarriages. He never had any venereal disease. Blood negative. The only defect he complains of is slight deafness in the right ear, which he attributes to diving.

Twelve years ago he received a superficial bullet-wound which grazed the skin on the left side of his neck, slightly injuring it. This healed quickly. In 1915 he experienced a burning sensation at the site of the bullet-wound on the left side of the neck below the ear. The surface became red and itchy; later on it assumed a mottled appearance and felt rough to touch. The patch continued to spread slowly at the periphery. Two years ago a papule formed at the left commissure of the lower lip, which he cut by shaving. This also healed quickly, but subsequently became depressed, leaving a smooth scar the size of a split-pea. Shortly after a similar lesion appeared on the tip of left ala nasi which left a similar scar.

The plaque on the left side of the neck is now irregular in shape,

measuring 9 cm. in its largest dimensions, and is depressed. The margins are sharply defined. There is no zone of erythema or lilac border. The skin is thinned and wrinkled in appearance, diminished in thickness, inelastic, and when pinched up seems loosely attached to the underlying fat. The colour is snow-white for the most part, and scattered irregularly over the surface are pigmented patches varying in size from a pin's head to a threepenny-piece. The surface is rough and desquamating. Sensation normal. The lymphatic glands in the neighbourhood are not affected. The sites of the lesions have no relation to the distribution of any nerve.

Immediately in front of the tragus is a smooth circular depression, which admits the tip of the little finger, conveying the impression that the supporting framework of the skin has disappeared, and left an empty space. The edges are smooth and sharply defined. The lesion at the tip of the nose is similar in character to that at the commissure of the lip, looking like a rodent ulcer which has undergone spontaneous cure.

Dr. Aspinall kindly excised a portion of the skin from the neck and I have to thank Dr. Frank Tidswell, Pathologist, for the following report :

"The epidermis shows the usual layers intact, but the component cells have a malnourished appearance; those of the stratum corneum in particular look dried up and shreddy. There are several small hair-follicles with sebaceous glands which are normal save that they share the malnourished appearance of the general epidermis. The more deeply-seated sudoriparous glands look quite normal. The corium lacks its papillary layer, the epidermal margin being flat. In the subpapillary layer there are a considerable number of ragged degenerated fibrils. Amongst and below these and in the reticular layer there is a considerable infiltration of small round-cells. This is particularly marked about the vessels of the subpapillary plexus, but occurs also in isolated patches round the deeper vessels. The endothelium of the capillaries and the entire walls of the larger vessels appear to be normal, and the lumina everywhere patent. Elastic fibres are plentiful enough in the deeper parts, but are inconspicuous near the surface. The connective-tissue cells are normal, and their collagenous fibres abundant except towards the epidermal margin. The muscle-bundles and endothelial cells look



TO ILLUSTRATE DR. McMURRAY'S CASE OF ANETODERMA
ERYTHEMATOSUM OF JADASSOHN.



normal. Special staining did not reveal any bacteria or fungal parasites."

The general issue of the microscopical examination of the piece of tissue is to show atrophy of the corium, and especially of its papillary layer, which appears to affect the fibrils rather than the cells, and with which is associated an infiltration of small round-cells. No manifest histological cause was found for this condition. The appearances are consistent with the descriptions of Anetoderma erythematodes (*Atrophia maculosa entis*).

ROYAL SOCIETY OF MEDICINE.

DERMATOLOGICAL SECTION.

MEETING held on June 16th, 1921, Dr. ARTHUR WHITFIELD, President of the Section, in the Chair.

Dr. H. W. BARBER showed a case of *Erythema figuratum perstans*. Patient, a female, aged 38 years. The eruption, which consisted of ringed erythematous patches, first appeared sixteen years ago around the right axilla. A few years later similar patches appeared near the groins and on the lower abdomen, and during the past two years behind the knees. As a child she had repeated attacks of tonsillitis, with quinsies, and her tonsils were scarred and septic.

The case corresponded to the one which was originally reported by Dr. Colcott Fox in the *International Atlas of Rare Skin-Diseases*, under the title of "*Erythema Gydatum Perstans*," and similar cases have been described by Wende and Mook.

Dr. E. G. GRAHAM LITTLE showed a case of *atrophic condition of skin following treatment of nævus*. The patient was a lady, aged 29 years. More than twenty years ago a nævus on her shoulder was treated with some acid which was said to be acetic. The nævus was the size of the end of a little finger, and was quite obliterated by the treatment, leaving a scar. From that focus had spread this atrophic condition of the skin for several years, and the process was still going on, causing her discomfort and trouble. At the present time there was a patch of dead white atrophic skin spreading from the

summit of the shoulder, the site of the original scar, across the left breast, in an area roughly of the size and shape of the palm of a man's hand. There did not seem to be any perceptible sclerodermic tissue there, but the diagnosis which occurred to him was sclerodermia. There seemed to have been no redness or ulcerative condition.

Drs. J. H. SEQUEIRA and P. N. PANTON showed a case of *erythrodermia with lymphocytosis*. The patient, a single man, aged 40 years, by occupation a groom-gardener, was admitted to the London Hospital on May 3rd, 1921, suffering from generalised erythrodermia of two years' duration. He was shown on account of the exact resemblance to a case shown by Dr. Sequeira before the Section in 1915* and again in 1919.† The condition was one of general erythrodermia with a remarkable blood picture. The colour of the skin and its characters were identical with those of the previous patient, and the characteristic features of the blood were the same in both instances. The present patient was apparently in good health. The previous patient was watched for four years, and ultimately died—unfortunately out of hospital. This condition was quite distinct from *Mycosis fungoides*, in which disease there were no such characteristic changes in the blood as in this variety of erythrodermia. Moreover, the previous patient was watched for four years and no tumours developed. There had been very little irritation of the skin. Dr. Turnbull had examined portions of the integument, which showed a chronic inflammatory condition.

Dr. PANTON said that an interesting feature of this case was the peculiar character of the blood change present. Identical blood changes had been present in a similar case examined by him in 1919. The main points of the blood examination in both cases were a moderate leucocytosis ranging from 15,000 to 30,000 leucocytes per cubic millimetre and a great increase in the lymphocytes, the relative proportions of the lymphocytes varying from 60 to 75 per cent., the type of lymphocyte being small. The red cells and haemoglobin were practically unaffected. It was almost justifiable to describe these blood changes as peculiar to this disease. The changes differed from chronic lymphatic leukaemia in the moderate degree of leucocytosis and in the percentage of lymphocytes. In lymphatic leukaemia the total leucocyte count varied from 60,000 to 200,000, and the relative proportion of lymphocytes frequently exceeded 90 per cent. In both these cases the blood had been examined over a considerable period of time, and on no occasion had the blood varied to any appreciable degree. A similar

* *Brit. Journ. Derm.*, 1915, xxvi, p. 417.

† *Ibid.*, 1919, xxxi, p. 148.

relative lymphocytosis was, of course, present in many conditions, but was invariably associated with a leucopenia. These blood changes being identical in the only two instances of the disease which he had met with, and being entirely absent from all their cases of *Mycosis fungoides*, strongly suggested that erythrodermia was a condition *per se*, and could be differentiated from the premycotic stage of *Mycosis fungoides* by an examination of the blood. Skin infiltrations were known to occur in leukaemia. In his experience such infiltrations were extremely rare, and remarkably so considering that almost every other organ in the body showed leukaemic infiltration. When they did occur they were merely minor incidents in a disease readily recognised by blood examination. There was one other and extremely rare condition of the skin associated with definite blood disease. In a case under the care of Dr. Sequeira, the patient, an Englishman, had become so dark as to be reasonably described as a black man. His blood had shown the changes typical of pernicious anaemia, and it had been evident that the colour of his skin was due to hæmolysis taking place in the skin instead of in the internal viscera. He (Dr. Panton) had never before or since seen or heard of any case quite similar to that patient.

Dr. E. G. GRAHAM LITTLE showed a case of *Keratodermia blenor-rhagica*. Patient, a male, aged 45 years, had been under Sir William Willcox's care at St. Mary's Hospital for three months. He appeared to have had gonorrhœal urethritis twenty years ago, and in the interval he had had several attacks of arthritis. More recently he had developed a characteristic horny medallion-like growth on the dorsal surface of the feet, and had the extreme cachexia which accompanied blenor-rhagic urethritis. Sir William Willcox was inclined to ascribe it, not to the gonorrhœal infection, but to a streptococcic condition. The skin-lesions, however, were quite definitely of the type which had been described as *Keratodermia blenor-rhagica*. The difficulty was the long duration and the apparent immunity from urethritis. Still, that long duration was not entirely without precedent. Dr. Winkelried Williams had shown a case in which the urethritis occurred at least thirteen years before the development of the skin condition. It seemed to be almost the rule that the skin condition should develop a long time after the cessation of the urethritis. In a case he saw at St. George's Hospital the interval was also a long one. Whether the name "*Keratodermia blenor-rhagica*" was a proper one, *i. e.* whether it was a gonorrhœal condition, was still a matter of dispute. The effect of gonorrhœal vaccines in these cases had, however, been surprisingly good.

Dr. F. CARMINOW DOBLE showed a case of *Hyperkeratosis blenor-*

rhagica. The patient, a man aged 29 years, first had gonorrhœa in 1917. His treatment consisted of irrigations of potassium permanganate, prostatic massage and sounds. He had had no vaccine treatment. There were no complications. On April 25th his right ankle became swollen and inflamed and very painful. In a week this swelling went down, but he then developed pain in the right hip, left shoulder and cervical vertebræ. Later the knees became swollen. Three weeks after admission to hospital he noticed a "pimple" on his right big toe, which turned into a hard corn. He picked this off, but another grew in its place. Corns then appeared on both feet.

A slight urethral discharge was observed on May 18th, but no gonococci were found. He came under the exhibitor's care on June 2nd, when he found gonococci in the urethral discharge, urine and prostatic fluid. His Wassermann reaction was negative, but the complement-deviation to gonorrhœa was + + +. He found his prostate normal in size, but his right seminal vesicle large and hard. He had a well-marked hyperkeratosis on the soles of his feet and toes, and several patches like broken blisters scattered about his ankles.

Prof. Chauffard considered this skin condition to be due to cachexia produced by the virulence of the gonotoxin which led to trophic disturbances. In most of the cases he had seen, although there had always been a joint complication, the patient did not appear to have had a particularly severe attack. He had found that intramuscular injections of blood-serum or "914" had a remarkably good effect.

Dr. H. G. ADAMSON said the interesting point about these cases of so-called gonorrhœal hyperkeratosis was their possible relationship to psoriasis. One often saw cases of severe psoriasis and rheumatoid arthritis with heaped-up conical lesions on the soles and around the nails which were indistinguishable from cases of gonorrhœal hyperkeratosis. Also in many cases of gonorrhœal hyperkeratosis there had been a history of a psoriasiform eruption on the trunk. A further point was that the histology was the same. These hyperkeratotic lumps which occurred on soles and palms were not really hyperkeratosis, but parakeratosis. If the crust was removed one came upon a smooth surface, as in psoriasis. It was sometimes difficult to say whether a case was gonorrhœal keratosis or psoriasis. Eighteen months ago he had, in hospital, a typical case of gonorrhœal hyperkeratosis, with huge cone-shaped lesions on the palms and soles and nails, and with balanitis; there was a psoriasiform eruption on the trunk, but no gonorrhœa, though there was a history of gonorrhœa fifteen years before. In that case it was difficult to say whether it was gonorrhœal hyperkeratosis or psoriasis. The

patient now shown had an eruption on the scalp, which was called seborrhœa, but might very well be psoriasis; it was a sharply demarcated scaly patch.

Dr. A. ALLPORT said that seven of these cases had been under his care at Rochester Row. In every case there had been gonorrhœa and arthritis—in other words systemic gonorrhœa—and he viewed the skin-lesions as a trophic change due to gonorrhœal poisoning. In the early cases every kind of local application had been tried after removing the crusts, but without effect. In some of the cases he had treated the joint condition by electrolysis, with salicylate of soda, and also with potassium iodide, but the skin-lesions about the joints so treated had not been benefited. One man, at Rochester Row more than a year, had become steadily worse, and had appeared to be dying of toxæmia. Two doses of intramine had been given to him, and he had improved considerably but had afterwards relapsed. The doses were only 1·5 c.c., and should probably have been larger. When the man had appeared to be at the point of death, Dr. Allport, at Col. Harrison's suggestion, gave neo-kharsivan, 0·2 grm., intramuscularly, dissolved in human serum. Just before the first injection the patient had been in a state of low, restless delirium, with a rapid, feeble pulse and extreme emaciation. His legs and arms had been encased in keratoderma and his head, face and trunk had had many patches. Next day the man had been obviously better, and subsequently he had four more injections, the effect of which had been extraordinarily good. Within three months he had been fit and well except for the ankylosis of his joints. In a later case, however, he had tried the same treatment without benefit. He was not able to say what was the reason of the beneficial effects of the treatment in the first case, as the Wassermann reaction had been negative and there had been no suggestion of syphilis. In another case he had tried T.A.B. vaccine intravenously, giving 200 millions twice. The man, who had had bad gonorrhœal rheumatism at the time, had improved rapidly.

Dr. J. H. SEQUEIRA could not agree that this variety of keratoderma was not peculiar to gonococcal infection. The eruption was characteristic, and had been recognised in the French clinics since 1893, when it was first described by Vidal.* He (Dr. Sequeira) had shown the first case recognised in this country in 1910.† He recalled a case of Jacquet's,‡ in which the patient had six attacks of gonorrhœa. In the first there was urethritis only, in the second and third there were urethritis and arthritis, and in the fourth, fifth and sixth attacks, urethritis, arthritis and keratoderma.

Dr. E. G. GRAHAM LITTLE and Sir WILLIAM WILLCOX showed a case of ? *Lichen variegatus*. The patient, a female, aged 24 years, had an eruption which had been ascribed to exposure to chemical substances in a munition factory, where she worked two years ago. After leaving that factory she developed a yellow colour, and some part of the rash followed. The unusual feature was the curious lichenoid

* Soc. de Derm., January 12th, 1893; *Ann. de Derm. et de Syph.*, 1893, 3me sér., iv, p. 3.

† *Brit. Journ. Derm.*, 1910, xxii, p. 139.

‡ *Bull. et Mém. Soc. Méd. des Hôp. de Paris*, January, 1897, 3 s. xiv, p. 93.

follicular eruption on the back, and especially on the thighs. There was an appearance of a very remarkable degree of *striae cutis distensæ*. The exhibitors did not think her munition work had anything to do with the appearance of the eruption, but were not prepared to say what the eruption was. It was not of very long duration—not more than two years—and she was getting well.

The PRESIDENT said he was more strongly impressed by the very solid fatty œdema in the case than by the skin-eruption. The latter was an excess of a fairly common condition in girls of about this age, usually limited to the extensor surfaces of the upper arm, and nearly always occurring in very fat girls. He did not think it was seen in men even when fat. He regarded it as a stagnatory folliculitis of the arms and trunk. The patient said she grew fat quickly and became much darker than before; whether she was confusing that with discoloration caused by her munition work he could not be clear. He regarded this as an endocrine condition, and thought the eruption was in some degrees secondary to the fatty stagnation and partly of endocrine origin. Either the pituitary body or the ovary might be at fault, and he suggested that the patient's condition should be investigated from that point of view. He felt certain this case was not one of *Lichen variegatus*.

CURRENT LITERATURE.

INFLAMMATIONS, ETC.

TWO CASES OF LICHEN RUBER PLANUS CURED AT PODEBRADY (MINERAL SPRINGS IN BOHEMIA). T. VONDROVIC (*Česká Dermatologie*, 1920, i, No. 5.)

THE effect of mineral baths containing free carbonic acid gas and iron salts on certain skin-diseases (especially eczema, psoriasis, acne, furunculosis) was known to be beneficial. Lately two cases of *Lichen planus* responded well to baths. It is undoubtedly the improved circulation in the superficial skin capillaries, stimulated directly by the free carbonic acid gas, and the maceration brought on by frequent, prolonged bathing that brings on improvement. The radium emanation of the springs at Poděbrady may also play a rôle. Baths control the itching promptly.

SPINKA (St. Louis).

SUBACUTE MALIGNANT PEMPHIGUS WITH EXTENSIVE BULLÆ. JOHN E. LANE and ROBERT A. LAMBERT. (*Arch. of Derm. and Syph.*, 1921, iv, p. 141.)

THE patient was a woman, aged 69 years, and she suffered from the type of eruption which is generally placed under the heading of chronic or true pemphigus. She was admitted into hospital on December 29th, 1920, with a bullous eruption, from which she had been suffering for about six weeks. She remained in much the same condition until three or four days before her death on February 29th, when she became prostrated, and there was a sudden and

profuse hæmorrhage from the mouth. A noteworthy feature of the case was that eosinophils were relatively rare in the sections, and were not increased in the blood, while plasma-cells constituted a prominent feature of the cellular reaction. Wide-spread lesions were present in the respiratory tract, which were interpreted as part of the pemphigus, and Gram-positive cocci were found in the mucosa.

J. M. H. M.

ATROPHIA CUTIS IDIOPATHICA CHRONICA PROGRESSIVA DIFFUSA. B. REJSEK. (*Česká Dermatologie*, 1920, i, No. 9.)

THE patient, a woman, aged 34 years, showed an idiopathic atrophy of the skin, which began, at the age of eighteen, symmetrically on the dorsal parts of both feet, and spread toward the lower third of the thighs. She used various local applications and arsenic internally without effect. At the time of examination she showed a well-advanced case of atrophy of the skin with disappearance of the hair and follicular orifices. Underlying vascular plexuses were plainly visible.

The author describes in detail the histological findings of sections of the skin, showing the earliest and the most advanced changes. He considers the vascular changes (thickening of intima, infiltration of adventitia of larger vessels) as primary and most important. The cellular infiltration follows with changes in the connective tissue and final disappearance of the elastic fibres. In advanced cases the stratum papillaris is completely gone. The article contains a review of various theories dealing with ætiology. The patient showed a considerable improvement after 30 grm. of potassium iodide had been taken. The infiltration present on both shins disappeared; the skin became pliable and less livid, and scaling lessened; the atrophic areas felt definitely firmer to touch.

SPINKA (St. Louis).

INDUSTRIAL DERMATOSES AMONGST PRINTERS. W. J.

MCCONNELL. (*U.S. Public Health Series, Public Health Reports*, May 6th) 1921, xxxvi, No. 18, pp. 979-989; *Journ. Ind. Hygiene*, 1921, iii, p. 102 [abs.].)

INK poisoning, affecting the parts of the arms and hands which are much in contact with inks, is common in printers. The condition is usually attributed to the substitutes for or adulterants in the oil of turpentine which is used for cleaning purposes.

In this investigation it was found that printers' hands, especially in the "hand press" rooms, become greatly soiled by ink. The ink itself did not prove an irritant to the skin. The dermatosis is caused by the harsh methods used to remove the stains. The parts are first immersed in a mineral oil, then soap and hot water are applied with pumice stone, fine sand, or a stiff brush. The mineral oil was proved to be harmless. Examination of the cases soon showed that the trouble was much more frequent and severe in those who had dry and not oily skins.

The following method of preventing this dermatosis was found satisfactory. Apply lanolin to the parts before going into the press rooms. At lunch time wash in a mixture of green soap, saw-dust and water, then reapply the lanolin.

R. P. W.

DERMATITIS AMONG WORKERS IN CANE. (*Il Lavoro*, January 31st, 1921, ii, No. 9, pp. 274-275; *Journ. Ind. Hygiene*, 1921, iii, p. 103 [abs.].)

"FROM the macerated cane stalk comes a black dust, which on contact with the skin is capable of producing dermatitis of the forehead, cheeks, eyelids, nose,

the lateral parts of the neck, back of the hands and scrotum. The conjunctiva is also involved. The workers complain of itching, burning and slight pain."

R. P. W.

SYPHILIS.

REPORT OF A CASE OF SYPHILITIC ULCERATION OF THE VAGINAL VAULT AND CERVIX COMPLICATING PREGNANCY AT THE EIGHTH MONTH, CURED BY ANTI-SYPHILITIC TREATMENT AND FOLLOWED BY NORMAL LABOUR AT FULL TERM. R. A. BARTHOLOMEW. (*Amer. Journ. of Syph.*, 1920, iv, No. 4, p. 725.)

THE author describes the case of a coloured woman, aged 17 years, who developed a foul leucorrhœal discharge during the seventh month of pregnancy. On examination the entire vaginal vault was apparently converted into a large circular ulcer 3 cm. in diameter.

The Wassermann reaction was four-plus, and tissue removed from the edge of the ulcer showed changes indicative of syphilis, such as fibrosis, increased vascularity, with marked small round-cell infiltration about the vessels. No giant-cells, tubercles or evidences of cancer were seen.

Rapid healing occurred under intensive treatment with neodiarsenol and mercury and labour occurred at term without any difficulty. A. M. H. G.

ELEPHANTIASIS OF GENITALS DUE TO LUES. R. SCHWANK. (*Česká Dermatologie*, 1920, i, No. 2.)

THE patient, a man, aged 46 years, with healthy wife and three children, negative personal and venereal history, presented a marked diffuse swelling of penis and scrotum. The oedema was painless and developed to the size of a child's head in the course of two weeks. Slight phimosis was present. There was no urethral discharge. In the dorsal surface a definite cord-like infiltration was palpable, corresponding in location to the dorsal lymph-vessel. The scrotum was uniformly enlarged; the testicles and epididymis were normal. The inguinal glands were the size of a walnut, hard, smooth, freely movable, not tender. The Wassermann reaction was positive. An excised gland showed miliary gummata with a dense connective-tissue infiltration almost entirely replacing the adenoid structure. Microscopic examination excluded the presence of tuberculous by the typical vascular changes and absence of giant-cells. The author believes that advanced changes in the inguinal lymph-glands, destroying almost completely the adenoid structure, were partly responsible for changes in lymph circulation, its stagnation, and the resulting oedema with final elephantiasis. The process led to conditions analogous to complete extirpation of the glands. The patient improved rapidly under vigorous combined antiluetic treatment. The swelling was reduced to half the original size in one month. Later it increased again somewhat, without apparent cause. The patient disappeared from further observation.

SPINKA (St. Louis).

SYPHILIS OF THE GENITAL ORGANS OF THE MALE AND THE URINARY ORGANS—IV. L. THOMPSON. (*Amer. Journ. of Syph.*, 1920, iv, No. 4, p. 706.)

THIS article is the fourth of a series, and deals with the syphilitic lesions found in the scrotum, testicle, epididymis, spermatic cord and seminal vesicles. The

author has given a historical and critical review of the subjects dealt with, and some good illustrations accompany the article.

A. M. H. G.

SPONTANEOUS RUPTURE OF THE HEART AND AORTA. A. V.

STGEORGE. (*Amer. Journ. of Syph.*, 1920, iv, No. 4, p. 702.)

THE author describes two cases which he had had the opportunity of examining post-mortem. The first was the case of a woman, aged 22 years, who had died suddenly from rupture of the left ventricle through a gumma in its wall. The second was a case of rupture of the aorta in a man, aged 45 years, who had evidence of syphilitic infection. The cases are discussed in detail.

A. M. H. G.

SYPHILIS OF THE LUNG. UDO J. WILE and CLEMENT H. MARSHALL.

(*Arch. of Derm. and Syph.*, 1921, iv, p. 37.)

ACCORDING to the writers, acquired pulmonary syphilis is exceedingly rare pathologically, and rarer clinically, but involvement of the lungs is not infrequent in the form of the well-known white pneumonia. The clinical picture associated with it is not characteristic, and no case can be absolutely accepted without a pathological examination. Acquired syphilis in the lung would seem to appear in three forms: (1) As isolated gummas of the lung, (2) as diffused syphilitic fibrosis, and (3) as diffused broncho-pneumonia; of these, the chronic fibroid changes are the most frequent.

The prognosis varies directly with the time at which a correct diagnosis is established, and the promptitude with which syphilitic treatment is instituted.

A series of three illustrative cases are reported.

J. M. H. M.

SYPHILIS AND TUBERCULOSIS. LESTER HOLLANDER and FREDERICK

C. NARR. (*Arch. of Derm. and Syph.*, 1921, iv, p. 153.)

A CASE is reported in which syphilis and tuberculosis co-existed. The post-mortem appearances are depicted and described, and the available statistics of the two diseases are reviewed.

J. M. H. M.

THE GENESIS OF NEUROSYPHILIS. JOSEPH EARLE MOORE. (*Arch. of Derm. and Syph.*, 1921, iv, p. 55.)

THE writer comes to the conclusion in this paper that, in the majority of cases of neurosyphilis, invasion of the central nervous system takes place during the first few months of the infection, though it may occur at any time during the course. It apparently takes place by direct extension, either from a gummatous periostitis of the inner cranial table, or from a generalisation of the disease during the secondary period.

J. M. H. M.

A COMPARATIVE STUDY OF SYPHILIS IN WHITES AND IN NEGROES. ERNEST L. ZIMMERMANN. (*Arch. of Derm. and Syph.*, 1921, iv, p. 75.)

ACCORDING to the writer, extra-genital infection is relatively infrequent in negroes. Among coloured males and females the age of infection is respectively one and two years earlier than in white males and females.

Secondary syphilis in the negro is characterised by marked polyadenitis, by frequent and severe osteoarthritic symptoms, by the frequency of iritis, and by the high incidence of follicular and pustular syphilids. A striking racial peculiarity is the frequent occurrence of the annular papular syphiloderm.

Bone syphilis is the most frequent lesion of tertiary syphilis in the negro, exceeding neuro-syphilis, which in white patients comprised almost half of all late manifestations.

Cardio-vascular syphilis is more frequent in the negro, with an incidence of 2 to 1 in coloured and white males respectively.

Stricture of the rectum and Elephantiasis vulvæ are extremely common in the coloured female.

Leukoplakia is rare in the negro.

Tertiary adenitis is common in the negro.

Neuro-syphilis is more frequent in white patients than in negroes. The negro is less likely to develop tabes or paresis, while the large group of unclassified cases of cerebro-spinal syphilis is approximately of equal frequency in the two races. In negroes it is especially likely to manifest itself in the form of cerebral endarteritis.

In respect to syphilitic infection, there exist inherited biologic differences between white and negro patients. The negro develops intense reactions on the part of cutaneous and osseous structures, and is relatively free from tabes and paresis. In white patients syphilis more frequently runs its course with skin-manifestations, slight or absent, but there is a greater tendency toward the eventual development of tabes or paresis.

J. M. H. M.

SPIROCHÆTA PALLIDA IN THE MOUTH. PAVEL SAVNIK. (*Česká Dermatologie*, 1920, i, Nos. 7, 8, 9.)

The great frequency of luetic lesions in the mouth led the author to a study of *Spirochæta pallida* in regard to the danger of contagion and the resistance to various chemicals.

The results of examinations:

Number of cases.	Lesions.	<i>Spirochæta pallida</i> found.
25	Chancre	4
48	Lues II	34
6	Gumma	0
34	Lues latens	5
113		43

The disappearance of spirochaetes during treatment:

Primary stage.—Three cases treated with mercury rubs (grm. 3 daily) became negative, 1 after 5, 1 after 10, 1 after 15 rubs.

Secondary stage.—In 11 cases treated with mercury rubs, were found—

After 5 days	1 negative	10 positives.
In 10	3	8 ..
In 15	6	5 ..
In 29	9	2 ..
In 25	9	2 ..

In 2 cases negative at the start *pallida* was found in the course of treatment. Out of 3 cases of specific angina treated with mercury salicylate (1 grain every fifth day), 2 became negative 24 hours after the third, 1 after the fourth injection. Out of 4 cases treated with neo-salvarsan, 2 cases became negative 24 hours after the first injection. Nine cases of secondary lues receiving a combined treatment showed how much more effective neo-salvarsan is than mercury in destroying the spirochaetes. The smallest dose (0.3) is not sufficient.

The author further gives the result of the action of 20 different chemicals

on the spirochæte under the microscope, and concludes that for practical purposes 4 per cent. boric acid solution seems the most satisfactory gargle. It is quite efficient in keeping the surface of the buccal mucosa free of spirochætes. Regular gargling can reduce the danger of accidental contagion.

SPINKA (St. Louis).

ON THE REACTION OF PREGNANT AND LACTATING FEMALES TO INOCULATION WITH TREPONEMA PALLIDUM: A PRELIMINARY NOTE. W. H. BROWN and L. PEARCE. (*Amer. Journ. of Syph.*, 1920, iv, No. 4, p. 593.)

THE authors inoculated a series of normal and pregnant rabbits with a testicular emulsion containing an average of 1 to 3 spirochætes to the microscopic field, and as an immediate result of their experiments they find that normal rabbits, whether male or female, react to intradermal inoculations of the vulva or sheath by the prompt development of characteristic indurated lesions at the site of inoculation and a well-marked lymphadenitis.

Of the eight pregnant females inoculated in the same way only four of them showed any clinical sign of infection whatsoever; in three of these the reaction consisted of a very slight and transient infiltration at the site of inoculation, unaccompanied by lymphadenitis; one of these animals showed no constitutional disturbance, but the two in which the local reaction was most marked showed profound constitutional disturbances as well, each giving birth to a dead fœtus, and of fifteen young born of these two females only one survived beyond the first week of life.

The only inoculation of a pregnant animal which gave rise to a lesion comparable to those of the controls was made during the middle of pregnancy, but the lesion did not appear until towards the end of lactation.

The authors suggest that there may be a defensive mechanism in the pregnant animal capable of opposing a resistance to inoculations performed at the time of conception such that little or no clinical sign of infection appears—a condition possibly analogous to that upon which Colles' law was founded. In other instances, however, slight local lesions and marked constitutional disturbances are produced which suggest an ineffectual resistance to the infection or a breaking down of the defensive mechanism. They consider it possible that from the occurrence of these two extreme types, a third type approaching more nearly that seen in the normal animal might be expected.

A. M. H. G.

LATENT INFECTIONS WITH THE DEMONSTRATION OF SPIROCHÆTE PALLIDA IN LYMPHOID TISSUES OF THE RABBIT.

W. H. BROWN and L. PEARCE. (*Amer. Journ. of Syph.*, 1921, v, No. 1, p. 1.)

THE authors removed popliteal lymphatic glands from six rabbits which had recovered from generalised syphilis, and had been infected at intervals varying from four years and three months to seven months before these experiments were undertaken. Each of the glands was injected into two normal rabbits and positive results obtained in every case. The incubation period varied from thirty-one to forty-four days. From these facts the authors conclude that rabbits which have recovered from clinical manifestations of syphilis may harbour virulent spirochætes almost indefinitely even though no further manifestations of infection should occur.

A. M. H. G.

STRAIN IN SPIROCHÆTES. B. P. THOM. (*Amer. Journ. of Syph.*, 1921, v. No. 1, p. 9.)

THOM discusses in detail, and with full quotations from recent literature, the question as to whether the different types of syphilis are produced by different strains of the causative organism. His conclusion is that there is no such thing as "strain" in spirochetes, but that individual idiosyncrasy, if properly investigated, will account for all the seeming vagaries of the disease. In other words, the selective action of the *Spirochæta pallida* when introduced into the body is governed entirely by the manner in which the tissues of the host react to the invader.

A. M. H. G.

THE PREPARATION OF AMBOCEPTOR WITH HUMAN ERYTHROCYTES. A. H. SANFORD. (*Amer. Journ. of Syph.*, 1920, iv, No. 4, p. 697.)

THE author has found that a very satisfactory amboceptor for human erythrocytes can be obtained from the dog. A dog about the size of a fox-terrier is preferred, as it is more easily handled and the immunisation can be completed in a comparatively short time. Full details of the methods employed are given.

A. M. H. G.

THE STUDY OF ANTIGENS IN THE BORDET-WASSERMANN REACTION. F. BERKA. (*Česká Dermatologie*, 1920, i, No. 7.)

COMMERCIAL products not being available during the past year, each serological station had to depend on its own reagents. To facilitate the work and to standardise the methods used the author gives results of his experimental work with antigens as carried on at the State Hospital in Ilomouc (Moravia). He gives the technique used in preparation of antigens of the alcoholic (plain and cholesterolinised), ethereal and Bordet's type, and compares their value with that of antigens prepared from specific organs (fœtal, lnetic, liver, etc.).

The antigens made from specific organs did not prove superior to those made from normal organs. The author concludes that all antigens can be of good use if properly titrated so their nature be well known and the correct dose found.

SPINKA (St. Louis).

THE SACHS-GEORGI TEST FOR SYPHILIS. FREDERIC PARKER and ANGELICA V. R. HAIGH. (*Arch. of Derm. and Syph.*, 1921, iv, p. 67.)

THE following is a summary of the experience of the writers as to the value of the Sachs-Georgi reaction:

(1) The Sachs-Georgi reaction agreed with the Wassermann reaction in 93.07 per cent. of 520 parallel cases.

(2) As performed by the method described, the Sachs-Georgi test gives no unspecific positive reactions as controlled by the Wassermann test, and also does not give as many positive reactions, especially in cases in which the Wassermann reaction is weak or doubtful.

(3) Because of its simplicity and apparent dependability it deserves further study, especially in cases in which the clinical aspects can be definitely determined.

J. M. H. M.

SALHYRSIN. EISLER. (*Česká Dermatologie*, 1920, i, No. 3.)

SALHYRSIN is a new derivative of arsenic and mercury (3 per cent. salicylate). It comes in 2 c.c. ampoules, the daily dose being 2 c.c. given intramuscularly.

This new antiluetic preparation was tried out on eighty patients in the Dermatological Clinic of Prague. There were no local or general reactions following injections. Administration causes very little pain. Salhyrsin has only mild antiluetic properties, but has an excellent tonic effect on syphilitics and makes a valuable preliminary drug to mercurial treatments. Patients that had salhyrsin responded to mercury much more rapidly and stand it well. The article gives the clinical course of cases thus treated. SPINKA (St. Louis).

FRENCH ARSENOBENZOL, OR GALYL. EISLER. (*Česká Dermat logie*, 1920, i, No. 8.)

GALYL was tried at the Dermatological Clinic in Prague with good results in cases of malignant lues and early tabes dorsalis. Given to moribund patients it proved to be an excellent roborant, well tolerated, and valuable in preparing the patient for further specific treatment. Given in large amounts it is equivalent to neo-salvarsan, and is superior to the latter in its absolute safety and ease of administration. SPINKA (St. Louis).

EXPERIENCES WITH SODIUM ARSPHENAMIN (DIARSENOL).

HENRY E. MICHELSEN and DAVID M. SIPERSTEIN. (*Arch. of Derm. and Syph.*, 1921, iv, p. 184.)

SODIUM arspheamin was found to be a readily soluble, easily administered and safe preparation, and one which exerted a marked influence on the clinical manifestations of syphilis. Its therapeutic efficiency clinically, and its effect on the Wassermann reaction, appeared to be equal to that of the other arspheamins. J. M. H. M.

A REVIEW OF THE LITERATURE AND A DISCUSSION OF SILVER ARSPHENAMIN. H. E. MICHELSON and DAVID M. SIPERSTEIN. (*Arch. of Derm. and Syph.*, 1921, iv, p. 193.)

AFTER a careful survey of the literature, and as the result of a limited personal use, the writers feel that they may safely state that silver arspheamin is an efficient spirochaetocide, and has a pronounced effect on the visible lesions of syphilis. In the majority of cases of fresh syphilis, a positive Wassermann reaction becomes negative after the first course of from six to ten injections of the drug. One of the definite advantages of this preparation is the absence of the characteristic, and often nauseating, garlie-like odour which patients detect when they are receiving the other arspheamins intravenously.

The reactions caused by the drug are in no way peculiar, and are similar to those which may result from the arspheamin group, and there is no authentic case of argyria being produced by it. It is a more complex salt than any of the other arspheamins. J. M. H. M.

STOMATITIS AND APLASTIC ANÆMIA DUE TO NEO-ARSPHENAMIN. JOSEPH EARLE MOORE and ALBERT KEIDEL. (*Arch. of Derm. and Syph.*, 1921, iv, p. 169.)

AMONG the late reactions occurring after the use of arspheamin and its substitutes, the most serious are dermatitis, stomatitis, jaundice, and occasionally encephalitis. In addition there may be a striking alteration in the blood-picture during life, and marked changes in the bone-marrow at necropsy. The condition of the blood is aplastic anæmia, and the condition of the bone-marrow points to death having been caused by aplastic anæmia. J. M. H. M.

THE FIGHT AGAINST PROSTITUTION. F. SAMBERGER. (*Česká Dermatologie*, 1920, i, Nos. 3-4.)

THE author discusses the question, "Shall prostitution be regulated or abolished?" from the standpoint of a venereologist, and one who was to express his opinion on the subject at a moment when a new State (Czecho-Slovakia) was formed and the country was to formulate new laws. Samberger states that the regulation system is not doing what is claimed for it. He opposes regulation and advocates abolition of regulated prostitution. The strictly medical supervision cannot render prostitution safe. The best a regulation system can do is to leave at large all prostitutes who know how to use douches properly, and to confine those with active luetic lesions. It is impossible to improve regulation beyond that.

SPINKA (St. Louis.)

REVIEW.

SYPHILIS AND VENEREAL DISEASES.*

THE style in which this book is written well reflects the high traditions of English pre-war syphilology. The chapter on generalities is a most refreshing encounter between the great past and future of our knowledge of syphilitic infection, and is to be recommended to all V.D. assistants whose vision is limited to Wassermann reports and salvarsan injections. The chapter on pathology is far too short; the post-mortem room alone reveals the true gravity of a treponemal invasion, and the microscope is the medium for revealing the unity of its many effects. The old divisions of clinical syphilitic stages are maintained—as they should be; the chapters on nervous and inherited syphilis are excellent in description and in differential diagnosis. Gonorrhœa is adequately dealt with and its instrumentation is not over-emphasised; the marriage test is adequately judged. The authors have a conservative view as to the freedom of a syphilitic to marry.

This really well written and useful volume is helpfully illustrated and clearly printed.

* *Syphilis and Venereal Diseases.* By C. F. MARSHALL and E. A. FRENCH. 4th Edition. Demy 8vo, pp. xii + 434, with 90 figures and 7 coloured plates. Baillière, Tindall & Cox. Price 25s. nett.

THE BRITISH JOURNAL OF DERMATOLOGY AND SYPHILIS DECEMBER, 1921.

LYMPHOBLASTIC ERYTHRODERMIA.

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AND

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THE three cases here described are characterised by—(1) a general erythrodermia, (2) a specific change in the blood.

We regard these as symptoms of a disease to which it is impossible at present to assign a cause. The blood-picture is sufficiently distinctive to render possible a diagnosis from other erythrodermias, including that of *Mycosis fungoides*.

Two of the patients have been under our own observation, and have been shown at the Dermatological Section of the Royal Society of Medicine, and the report of the second case led Dr. W. H. Brown, of Glasgow, to send us particulars and films from a case under his own care, and which he most generously allowed us to include in the present communication.

CASE I.—William B—, aged 60 years, admitted to the London Hospital under the care of Dr. Sequeira on October 1st, 1915. The family history was unimportant. In 1913 a "red patch" appeared on the shoulders and the eruption gradually spread on the whole body. On admission the patient was a characteristic "*homme rouge*," the skin everywhere being of a brick-red colour. The surface generally was smooth and some superficial œdema was present in the lower extremities, where there was a slight scaling. The only parts of the skin which were approaching the normal colour were the orbital regions and the hands and feet. The eruption itched intensely and had done so from the onset. The lymphatic glands in both cervical regions, the axillæ and groins were enlarged, movable, painless and not tender. Radiographic examination failed to reveal any evidence of enlarged glands in the thorax. Neither the liver nor the

spleen was enlarged. The urine presented no abnormality. The Wassermann reaction was negative. Dr. Panton examined the blood on three occasions and the following is a characteristic count :

	October 5th, 1915.
Erythrocytes	4,500,000
Leucocytes	8,000

Differential count.

	Per cent.
Polynuclear neutrophiles	38.0
Polynuclear eosinophiles	1.0
Small lymphocytes	42.0
Large lymphocytes	13.5
Large hyaline	2.0
Coarsely granular basophiles	0.5
Neutrophile myelocytes	1.0
Myeloblasts	2.0
	100.0

The patient was under observation in and out of hospital, and in 1919 he was again shown at the Royal Society of Medicine. No material change had taken place in the condition of the skin. There was the same brick-red colour of the integument from head to foot with swelling of the extremities and scaling of the legs. The scalp and eyebrows had become completely denuded of hair but the eyelashes remained. The hair of the beard, moustache, axillary and pubic regions was scanty. There was never any evidence of visceral disease. The urine was free from albumin and sugar, the percentage of urea being 1.1. There was no rise of temperature during the patient's several terms of residence in hospital. The Wassermann reaction was observed on several occasions and was always completely negative.

In 1919 the mental condition became abnormal. The patient was very depressed and constantly scratching, and he frequently passed urine and feces in bed. There was never any loss of consciousness and ordinarily there was complete control of the sphincters. The loss of control was such as is met with in dementia.

The lymphatic glands in the cervical, axillary and inguinal regions were enlarged but none exceeded a walnut in size.

A cervical gland was removed for examination, and Dr. Turnbull reported that there were some anomalies in the gland but he was unable to detect evidence of lymphadenoid leukaemia.

Dr. Panton again made several examinations of the blood, and although there was a considerable increase in the leucocytes they never reached the high proportion met with in leukaemia.

	April 12th, 1919.	May 5th, 1919.
Red cells	3,999,000	4,650,000
Hæmoglobin	70 per cent.	55 per cent.
White blood-cells	32,800	16,000
Polynuclear neutrophiles	16.5 per cent.	35.5 per cent.
Polynuclear eosinophiles	6.5 ..	3.0 ..
Small lymphocytes	75.0 ..	59.5 ..
Large hyaline cells	2.0 ..	2.0 ..
	100.0 ..	100.0 ..

This slight improvement in the blood-picture followed the injection of arsenic (novarsenobillon).

A portion of the skin was excised at this time, but beyond showing chronic inflammatory changes there was nothing to favour the diagnosis of *Mycosis fungoides*.

The patient's mental condition deteriorated rapidly and he was finally removed to his home and died. There was no autopsy.

CASE 2.—James S.—, aged 40 years, a groom-gardener, was admitted to the London Hospital under the care of Dr. Sequeira on May 3rd, 1921.

The patient is a well-built, dark-haired, slightly bald man with blue eyes. He was born in Devonshire and is unmarried. His father died fifteen years ago—cause unknown. His mother is alive and well. One sister died of phthisis: five sisters and three brothers are alive and well. The patient suffered from measles and whooping-cough in infancy. Twelve years ago he had pains in the legs with swelling of the knees and was ill for six weeks, being treated as a case of rheumatism. There is no history or evidence of venereal disease. The present trouble began in Salonika in January, 1919, without any symptoms of illness. The patient was then in the Remount Department. The hands, feet and face were affected together, the hands and feet being dry and easily cracked, and the face "peeled." He was then treated with ointment as a case of "eczema." He returned home in May, 1919, but was no better. He tried to resume his work, but the skin-affection extended and he was obliged to give up his occupation in July, 1920. He has been unable to work since, owing to the dryness, hardness and stiffness of his hands and feet and general peeling of the body. So far his general health has been unaffected. About November, 1920, he noticed that his skin became darker in colour.

The appetite is good, the bowels act regularly, the urine is normal. There have been no headaches, no dyspnoea, and no loss of weight.

On admission the appearance was that of a general erythrodermia with slight exfoliation. Under the application of ung. plumbi subacetatis the scaling ceased.

The skin everywhere is brick-red in colour and feels thickened on palpation. It sweats frequently and is supple and nowhere tender. The skin of the body is darker than that of the face and hands. On both the palmar and posterior aspects the scales are deepened and the thumb and fingers are thickened by a palpable increase in the texture of the integument, which, over the knuckles, shows a little, easily removed, horny scale. The nails of the fingers and toes are natural.

The heart and vessels are normal. There is no enlargement of the liver or spleen. He has lost many of his molar teeth, but has no evidence of dyspepsia.

The inguinal glands are slightly enlarged. No enlargement could be detected in either the cervical or axillary glands. The eyes are slightly prominent with a little epiphora. The thyroid is not enlarged.

The Wassermann reaction was negative. As the first patient developed mental symptoms the cerebro-spinal fluid in this case was examined, but no abnormality was found.

In this case also Dr. Panton made numerous examinations of the blood.

The erythrocytes were about normal, 5,500,000 to 4,300,000; the hæmoglobin 85 to 90 per cent.; the colour-index 0·8 to 0·9. Leucocytes—average of 7 counts, 20,794; highest 30,800, lowest 13,680.

The percentage in stained blood had exactly the same features as in Case 1 :

	May 6th, 1921.	May 11th, 1921.	May 18th, 1921.	May 25th, 1921.	June 1st, 1921.
Polynuclear neutrophiles	26.0	22.0	25.0	24.6	18.4
" eosinophiles	3.5	2.5	3.0	1.4	1.6
Small lymphocytes	66.5	70.0	65.5	70.0	76.6
Large "	1.0	3.0	1.5	1.2	0.8
" hyaline cells	3.0	2.0	5.0	2.4	2.6
Coarsely granular basophilic cells	—	0.5	—	0.4	—
	100.0	100.0	100.0	100.0	100.0

	June 9th, 1921.	June, 15th, 1921.
Polynuclear neutrophiles	34.0	25.5
" eosinophiles	3.0	2.0
Small lymphocytes	59.0	68.5
Large "	0.5	0.5
" hyaline cells	3.5	3.0
Coarsely granular basophilic cells	—	0.5
	100.0	100.0

A portion of the skin was removed for microscopical examination, and the following is Prof. Turnbull's report :

Epidermis.—Slight keratosis, conspicuous hypertrophy of Malpighian layer, a few karyokinesis in the Malpighian layer. Perinuclear vacuolation in a considerable number of Malpighian cells, particularly in those of the basal layer.

Dermis.—Considerable infiltration of the dermis almost confined to the papillary layer. In the infiltration the majority of the cells are spindle and stellate cells. Many of these contain fine granules of iron-free pigment. The other cells are lymphocytes and adventitial cells, and a few plasma-cells. No eosinophile cells were seen. The vessels are not engorged.

Progress.—The patient's condition underwent no material change while he was in hospital. Many local applications were tried without benefit. X-ray treatment gave little or no relief. The man returned to his home in Devonshire and will be under the observation of his doctor there.

Dr. W. H. Brown's Report of his case.

Mrs. J.—, aged 64 years, married late in life and had no children. She had always enjoyed good health until onset of the present illness.

Family history.—Her father died young, cause unknown. One sister died, aged 21 years, of consumption. One brother died suddenly from hæmorrhage from the lungs. One brother alive and well.

History of her illness.—From two to two and a half years ago patient began to be troubled with an itching of the skin, chiefly on the trunk. This was mild at first, but gradually got worse and became more or less generalised. About ten to twelve months later the skin started to get red, first on the trunk, and this likewise spread gradually all over the body, and lastly appeared on the face and hands. For twelve months she had a great deal of suffering—her distress getting steadily worse. She had consulted several doctors, and been in one hospital without relief.

Description of case.—Patient was a stout, obese woman. The condition of the skin may be briefly described as a more or less generalised erythrodermia with no specially distinctive features, the redness being most marked on face, trunk, upper arms and thighs. *Face and head:* The appearance of the face is best described by saying she looked somewhat like "a boiled-lobster." The redness was most marked on the cheeks, was uniform, and there was no desquamation. Ears were congested and beginning to weep—the result of irritation from scratching. The whole scalp was red, slightly scaly, infiltrated and intensely itchy. The hair was thin. Eyelids showed some blepharitis. The lips were a little blue in colour, but otherwise the mucous membranes seemed normal. *Trunk:* On the chest and back the erythrodermia was fairly uniform, on the abdomen and lumbar region somewhat punctate or scarlatiniform in character. There was a moist intertrigo in the folds of the breasts. *Limbs:* On the arms and legs the redness was less marked, and only slight on the hands and feet. The redness all over the body faded on pressure. *Itching:* This was intolerable and practically constant. As a consequence patient was very restless and got little sleep at night. Apart from the erythrodermia and the altered blood picture nothing else was discovered. Her appetite was exceptionally good. Her tongue clean, perhaps a little glazed, and she had absolutely no gastrointestinal symptoms of any kind. Bowels were regular and the motions looked normal. Abdominal examination was difficult as she was so stout. No enlarged glands were detected. *Urine:* Contained no albumen or sugar, but slight indicanuria was present at times; the quantity passed in twenty-four hours was normal. Occasionally there was an evening temperature of 99° F. •

Blood examination.—The following is the picture found in the two observations made:

	First observation.		Second observation.
Red blood-cells . . .	4,760,000		3,720,000
White " . . .	27,400		23,000
Polynuclear neutrophile . . .	35	per cent.	29.5
Small lymphocytes . . .	53	"	60.4
Large " . . .	4.6	"	6
Large hyaline . . .	3.6	"	0.5
Eosinophile . . .	3.3	"	3.6
Hæmoglobin . . .	50	"	55

No nucleated reds or basophiles were found. Very slight poikilocytosis in one film.

During the short time the patient was under observation she got steadily worse. The intertrigo of breasts and axillæ became very troublesome; an irritable weeping dermatitis of ears and scalp developed. Local treatment was futile; patient complained of everything and tore off all dressings. X-rays were applied to the trunk and face, and seemed to give distinct temporary relief. Drugs given internally had no effect. The patient left the hospital in great misery and died two or three weeks later. From the husband's report a septic dermatitis of the feet seemed to develop.

DISCUSSION.

We have recently had under observation two characteristic cases of the generalised erythrodermia of *Mycosis fungoides*, which went

into the tumour stage and proved fatal. In neither of these cases was there any marked abnormality of the blood-count. In the paper read by one of us (J. H. S.), in opening a discussion of *Mycosis fungoides* in the Dermatological Section of the Royal Society of Medicine (4), the following figures were obtained from ten blood-counts :

	Percentage.	
Polynuclear neutrophiles .	53 to 83,	average 69
„ eosinophiles .	0 to 12	„ 5·6
Large lymphocytes .	5 to 11·5	„ 7
Small lymphocytes .	6·5 to 14·5	„ 10·7
Basophiles .	0 to 1	

In our two recent cases the leucocytes averaged 9500 per cubic millimetre. In many instances in the cases collected for the paper above mentioned it was observed that there was nothing abnormal in the blood.

In one case called *Mycosis fungoides*, Ramazzotti (5) found white cells 106,000, mostly lymphocytes.

On the occasions when these two cases of erythrodermia have been demonstrated in the Section of Dermatology, the question has been raised as to whether the condition should not be classed as Kaposi's *Lymphodermia perniciosa* (6). A careful examination of the account of this case suggests that it was more likely to be a case of *Mycosis fungoides*, and we find we are unable to make the distinction, as at the time of its publication it was impossible to make a differential blood-count. A case shown by one of us (J. H. S.) at the meeting of the Dermatological Society of London in 1901 (7) as a case of *Lymphodermia perniciosa* turned out to be *Mycosis fungoides*. Mendes da Costa's (8) case of *Lymphodermia perniciosa* began with a general exfoliative dermatitis with tumours, and was recognised by the author as an early stage of *Mycosis fungoides*. In neither of these cases was a differential blood-count possible.

We have no doubt that the cases we now bring forward are not *Mycosis fungoides*, and we think it would be better to drop the term "*Lymphodermia perniciosa*," as we have no means of comparing the blood conditions in our cases with those in Kaposi's classical case.

The varieties of cutaneous affection which may be recognised as occurring in leukaemia are :

(1) In the form of tumours, chiefly of the face, ears, etc., and with some infiltration of a diffuse character. This is clearly different from the cases here described.

(2) A diffuse infiltration of the skin with round cells, the skin being thickened, swollen, and of a bright red colour. The first case of its kind we are able to recognise is that of Riehl (9), shown at the Second International Dermatological Congress in Vienna in 1892. The essential features of his case are as follows :

A woman, aged 57 years, developed an eczematous weeping eruption which, in the course of some months, covered the whole body. In spite of treatment the skin became thickened and was bright red, painful on pressure and itching intensely. The lymphatic glands were enlarged. Leukæmia was diagnosed, the blood-count showing that the leucocytes were to the erythrocytes 1 in 24 to 1 in 26. The white cells were described as lymphocytes; there was no eosinophilia, and very few leucocytes of pathological character.

The skin is described as being red, thickened, and of leontiasis character *without* circumscribed tumours. The surface was scaly in some parts, weeping in others, with numerous excoriations and hæmorrhages from scratching and perimalleolar œdema. After a temporary improvement under arsenic the patient died. The autopsy confirmed the diagnosis of leukæmia. As will be explained later, we believe this type of case to be essentially different from that now under discussion.

A case described by von Zumbusch (10) presents characters identical with those found in our patients. The summary he gives is as follows :

A hitherto healthy old man, aged 70 years, became ill with an itching dermatosis, the skin of the face, head, ears, and later the neck, arms, chest and back became red. In the course of a few months the whole of the upper part of the body is involved, the face, head and ears being most affected. The hair of the scalp and beard then falls. On account of the redness and thickening of the skin and the baldness to which other people call his attention, and also on account of the itching, the patient consults a doctor. The blood examination shows that he has a leukæmic disease of the skin. Six months' treatment by X-rays and arsenic gives no relief. Von Zumbusch lays special stress on the fall of the hair and horny plugs in the hair-follicles. The patient died of pneumonia during the war. The autopsy showed leukæmic infiltration of the skin, recent and old leukæmic changes in the lymphatic glands, enlargement and infiltration of the spleen, small ill-defined and more diffuse leukæmic nodules in the liver, atheroma of the coronaries and other senile changes, hypertrophy of the right ventricles, emphysema, broncho-pneumonia and splenisation of the lower lobes.

The blood picture is important and corresponds exactly with our own cases:

Hæmoglobin	90 per cent.
Erythrocytes	4,800,000.
Leucocytes	20,000.
Differential count:	
Polynuclear neutrophiles	26.0 per cent.
„ eosinophiles	0.9 „
„ mast-cells	0.2 „
Small lymphocytes	66.0 „
Large „	6.2 „
Large mononuclears	0.7 „
	100.0 „

The erythrocytes showed no change. Blood-platelets were apparently normal.

Von Zumbusch describes his case under the title, “Erythrodermia (pseudo-)leukæmia” (Riehl), but, as already remarked, we cannot accept Riehl’s case as belonging to our group.

Cases such as that described by Cassar and Tapie (11), under the title “Erythrodermia subleucémique,” are obviously of a different type, the lymphocytes not exceeding 10 per cent. of a total leucocytosis of 22,000 to 24,000.

The specific blood changes present in these three cases are essentially as follows:

A moderate leucocytosis—the total number of leucocytes ranges from 8 to 30,000 per cubic millimetre. This leucocytosis consists in an increase of the small lymphocytes. The relative proportions of the lymphocytes range as high as 76 per cent. The changes in the red cells and hæmoglobin are slight, but in the first case we examined after an interval of four years a considerable degree of secondary anæmia was present, the red cells falling to 3,740,000 and the hæmoglobin to 40 per cent. No marked morphological changes, however, were present in the red cells, and no nucleated red cells were seen. These changes were identical in all of the three cases. Moreover, they varied very little in different examinations, some of which were conducted at considerable intervals of time. The blood picture is quite unlike that of the ordinary secondary anæmia with a relative lymphocytosis. In such cases there is almost invariably a leucopenia, and the relative proportions of the lymphocytes rarely reach the high figures found in these erythrodermias. The only condition in which a similar blood picture is obtained is that of chronic lymphatic leukæmia, and one of the

blood films of these cases seen for the first time without any knowledge of the clinical condition might conceivably have been mistaken for an early case of chronic lymphæmia. In chronic lymphatic leukæmia, however, the total leucocytic increase is considerably higher, and commonly reaches such a number as 200,000 per cubic millimetre. The relative proportion of lymphocytes is also higher and frequently exceeds 90 per cent. of the total white cells. The two blood states, that of these erythrodermias and that of lymphatic leukæmia, can be readily differentiated as a rule at a single examination, and invariably if one or more examinations are made over a period of time. So characteristic are the blood changes in these three cases, and so closely do they resemble each other, that it was possible to surmise from an examination of the blood alone that general erythrodermia of the skin was present.

It is well recognised that infiltration of the skin may occur in certain of the leukæmias. Such cases of this nature as have been seen by us at the London Hospital have been cases in which the blood changes were those of myeloid leukæmia, not lymphoid leukæmia. In these myeloid leukæmias, the blood picture has been that of acute or myeloblastic leukæmia. These acute myeloid leukæmias, of which we imagine Riehl's case to be an example, are frequently described in the literature and in the text-books as examples of acute lymphatic leukæmia, owing to the difficulty of distinguishing between non-granular myeloblasts and lymphocytes. In their terminal stages these acute leukæmias, owing to marrow exhaustion, frequently have a leucopenia, and come to be described as pseudo-leukæmias—a blood state which is only temporary and always terminal. The predominant cell present in these three cases of erythrodermia was invariably the small lymphocyte, and myeloblasts were practically absent. It might be occasionally possible with a single examination, particularly of children, to find a blood picture resembling the above, but such a change would only be a temporary, and, so to speak, a chance event. The constantly specific character of the blood changes in these erythrodermias, in spite of the small number of cases—namely, three described here and one described by von Zumbusch—appears to us to justify the statement that there is a specific blood change diagnostic of a particular type of general erythrodermia.

CONCLUSIONS.

We are of opinion that the condition is specific, and that it is probably more common than would appear from the literature. We have observed nothing to indicate a protozoal, toxic or metabolic origin, and having been unable to suggest its ætiology we propose to describe it by the name "Lymphoblastic erythrodermia," thus indicating the characteristic phenomena and differentiating it from other erythrodermias.

We conclude: (1) That the blood-picture which is persistent is essentially different from that of leukæmia and so-called pseudo-leukæmia.

(2) That lymphoblastic erythrodermia differs from *Mycosis fungoides*:

(a) In the blood-picture.

(b) In the histology.

(c) In the absence of a tumour stage.

(d) In its failure to respond to X-ray treatment.

We desire to express our grateful thanks to Dr. W. H. Brown for his valuable contribution to our series, and to Dr. Turnbull for his report on the pathology of our case.

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EXTRA-GENITAL CHANCRES IN AN UNUSUAL POSITION; A GENITAL CHANCRE OF CURIOUS ORIGIN, AND A REPORT OF THREE CASES.

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It is a fact that the majority of medical men whose duties include the treatment of syphilis among natives in South Africa are unanimously of the opinion that to see a primary spirochæmic lesion in a native is a distinctly unusual occurrence. This applies particularly to the "native areas," where the native lives his own kind of life in his own way, untrammelled by the often unwelcome digressions of an importunate civilisation. In the industrial areas, however, where the native is kept under fairly close supervision and submitted to periodic examinations, the chancre is met with as frequently as in any other type of community.

That the chancre is a curiosity in the "native areas" requires some explanation. This has been attempted on many occasions, and many diverse opinions have been expressed. That the native looks upon a primary sore as a very trivial affair is possibly part of the explanation. He does not seek advice until his disease is sufficiently advanced for him to consider it serious. This bright idea often does not dawn until his perforated palate interferes with articulation, or a breaking-down gumma mars his personal beauty. For this reason syphilis in its so-called tertiary stage is met with much more commonly than in the primary or secondary stages. But this explanation is not enough. The opinion has been put forward that the disease one meets among these natives is not syphilis but *Francisella tropica*. Syphilis is so common, however, that this opinion cannot be seriously entertained.

For explanation, then, we must consider the claims of (1) *Syphilis d'emblée*, (2) *Syphilis insontium*, (3) the prevalence of intermediate contagion, (4) the prevalence of unnatural sexual practices. It would seem that a possible explanation would be more likely to be found among the modes of transmission than by considering such

secondary aetiological factors as climate, race, idiosyncrasy, immunity, occupation, and so on. We will, therefore, discuss these headings in some detail.

(1) *Syphilis d'emblée*.—This term is applied to acquired syphilis where no primary lesion exists. Possibly in the majority of such cases the primary lesion is so small and insignificant that it escapes observation. Such an abrasion will heal spontaneously and it is either unobserved or soon forgotten. On the other hand cases of true syphilis d'emblée have been reported where there was definitely no primary sore, and where no breach of continuity of the epithelium could be found. Lane (1) has reported six such cases, and has noted their particular severity. Cases where medical men and medical students have accidentally inoculated themselves while handling syphilitic cases, and no primary sore has preceded secondary cutaneous signs, have been recorded by Jullien (2), Hutchinson (3), McDonagh (4), and others.

It is feasible that syphilis d'emblée is a much more common and frequent entity among natives than among whites, and that infection occurs without any obvious lesion at the site of spirochaetal entry. There is no evidence in support of this view, and in putting it forward one feels that it carries with it something more than an aroma of speculation. Its possibility must be kept in mind nevertheless, and further inquiry established.

(2) *Syphilis insoutium*.—Innocent infection is well recognised. We have such striking examples as the outbreak of syphilis at Newton Home, Kimberley, in 1910 (5); the case of Schamberg (6), where eight individuals were infected by indulging in a kissing game, the *personnel* of which included a youth inflicted with a labial chancre; numerous examples where European children have been infected by luetic native nurse-girls; and many others.

When thinking of the native one must consider his mode of life and the conditions under which he conducts his domestic affairs. McDonagh (7) has reminded us that in certain parts of South-Eastern Europe the ratio between extra-genital and genital chancres may be as high as 20 to 1. This is due to the poverty of the people, who lead their lives in unclean and insanitary surroundings, huddled together in small common living-rooms, eating with common utensils, and sleeping in close contact with each other. When applied to the

South African native one finds that all these conditions are fulfilled. Kissing is almost a rite, and many opportunities occur for innocent direct contagion and transmission.

(3) *Intermediate contagion*.—Classical examples of intermediate contagion are furnished by such cases as the teamster of Melot (8), who habitually chewed his lash and infected a passing pedestrian by accidentally flicking his face, and the seven glass-blowers of Brosius (9), five of whom later developed tabes. Again, the native lends himself as a potential victim of intermediate transmission. He indulges in such revolting habits as smoking a common tobacco pipe, drinking from a common beer urn, sleeping in a common blanket, and so on. Many of his tribal customs include the passing round of an honoured beer mug, or a friendly tobacco pipe, or partaking of a solid meal from a common dish without the aid of eating utensils.

When one considers the scope given to syphilis insontinm, and the untold opportunities for intermediate transmission in the ordinary routine of native everyday kraal life, one would expect the ratio of extra-genital to genital infection to be as high as, if not higher than, these parts of Europe referred to by McDonagh. The fact remains that an extra-genital chancre in the "native areas" is a distinct rarity. Here, however, one must take into account the native's reluctance to present himself or the members of his family for medical advice until he considers himself to be really seriously ill.

(4) *Unnatural sexual practices*.—Speaking generally, the native is an exceedingly moral being. He leads what he considers a moral life, and in many tribes he is liable to drastic penalties should he deviate from the path of high morality. The virginity of his maidens is prized very highly by the native, and very often after the nuptial feast the tribal custom demands that the virginity of the bride be practically demonstrated. For this purpose the wedded couple must perforce spend their first night and perform their initial marital functions on a clean white blanket. Blood on the blanket on the following morning is vaunted to the eager tribe as positive proof of vestal virginity. One questions, then, the statement of Thomson (10), where he says—"Among most savage people promiscuous sexual intercourse is the rule . . . and we find instances of almost entire tribes becoming luetic in an incredibly short time."

Nevertheless the native has many customs which, though he

considers them moral, are both revolting and immoral to the civilised mind. Many of these depend on manual and corporeal contact, the bastardising of sexual function, and many obscene and unnatural acrobatic sexual distortions. One such practice is known as *metcha* (11). This consists of an adult native using a native child for the gratification of his sexual desires. This is passed as perfectly in order, while healthy fornication is looked upon as a punishable sin or crime. He uses the thighs or axillae of the child as a makeshift vagina, and so whets his sexual appetite. The sex or age of the child is immaterial. Such practices may well account for the spread of much disease, in spite of the apparent morality of the male and the preserved virginity of the female. Among white races the spreading of the *Spironema pallidum* has been noted by amorous dallying with the genitalia, and it is not difficult to see how such a practice would quickly bring about a solution of the continuity of the child's delicate skin, and lead to a spironemal infection if the amorous adult were already an infective luetic.

The following cases are of interest on account of the unusual situation of the primary sores. These one endeavours to explain. The age of the patients is also interesting. Wolbarst (12) has reported a genital chancre in a boy five years of age, and Loyd Thompson (13) in a boy aged six. It has been noted that young children are sometimes exposed to infection on account of the prevalence of the superstition that contact with a virgin or healthy boy will cure venereal disease (14). As far as one is aware, this superstition does not exist among South African natives.

CASE 1.—A native male child, aged $2\frac{1}{2}$ to 3 years, showed a healing chancre on the inner margin of the biceps muscle of the left arm in its upper third (Fig. 1). The chancre was of the ecthymatous type, single, raised, circular, and sharply circumscribed. Its size was that of a shilling. The surface was dry and crusted, and the surrounding inflammation was negligible. The glands in the axilla on that side were hard but not unduly enlarged. There were no secondary signs apparent, the skin and mucous membranes being healthy. There was no general adenopathy. On account of the ignorance of the mother (who was not a luetic), in spite of the skill of our interpreter, it was impossible to extract any definite account of its age or causation. The child was put under treatment.

CASE 2.—A native female child, aged 2 years, showed a spirochaetal chancre in precisely the same situation as that in Case 1. The sore was single and rather of the erosive type (Fig. 2). It was oval, the size of sixpence or more, beautifully circumscribed, and showed very well-marked button-like induration. The edges were not elevated above the surrounding tissue, and the granulating centre was full

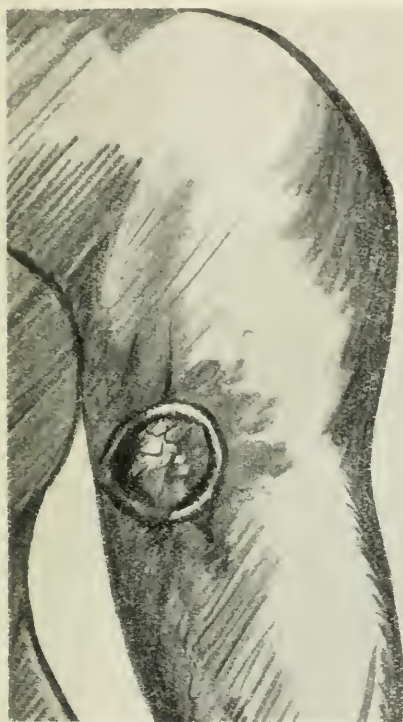


FIG. 1.

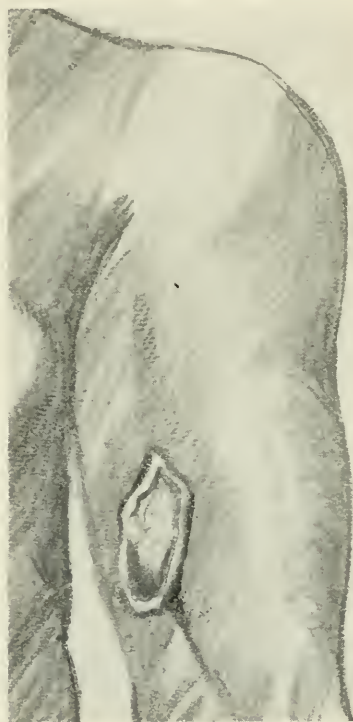


FIG. 2.

and somewhat dome-shaped. Surrounding inflammation was present but not severe, and the axillary glands were hard and definitely enlarged on the affected side. The patient showed no other symptoms. As far as we could gather from the efforts of our interpreter these two children lived in the same kraal. This Case, as well as Case 1, was seen on a native location over 100 miles from anywhere, therefore no effort could be made to demonstrate spirochaeta. McDonagh (15) has said that "There is only one way of diagnosing a sore, and that

is by looking at it." With this we concur, but in this case a tolerably reliable diagnosis could have been made at a range of something over a hundred yards. There was no difficulty in making a diagnosis in Case 1.

Case 3.—A native female child, aged between 3 and 4 years, showed on examination a papulo-ulcerative chancre situated on the vulva on the right side, about the middle of, and one inch distance

from, the inner labia majora margin. The edge of the sore was red and inflamed, but was not raised. The base was smooth, its margin regular, and nowhere did it undermine the edges. There was no crust, but the base was bathed in purulent exudate. Induration was absent. No secondary signs were apparent. There was a definite hard inguinal adenopathy, and shotty glands were palpable in both axillæ. There was no question of penetration.

In all three cases one is of opinion that *metcha* is the explanation of the unusual site of infection.

RECAPITULATION.

(1) Attention is drawn to the ideal conditions for the asexual and intermediate spread of syphilis presented by the South African native when living under his own primitive conditions in the so-called "native areas."

(2) Syphilis d'emblée is considered an outside possibility as an explanation of the rarity with which primary syphilis is usually met with.

(3) Syphilis insontium is probably much more common than is usually supposed. It is most probable that, were it possible to see cases early enough, many extra-genital primary lesions would be met with.

(4) Tribal customs counterbalance the good effect of the native's natural morality. *Metcha* is described, and its evil consequences demonstrated by three illustrative cases.

(5) The ages of the patients and the situation of the chancres are remarkable. These are explained by the reprehensible native custom which is described.

(6) It is probable that as a result of syphilis insontium and the immoral and unnatural customs in which the native indulges, McDonagh's estimate (7) of the ratio of extra-genital to genital sores in South-Eastern Europe might well be exceeded in some parts of the South African native areas.

(7) The use of young children as a means of securing sexual gratification is not due to the popular superstition that intercourse with a virgin or healthy boy will cure venereal disease. This superstition is unknown among natives, as far as one is aware.

I am indebted to Dr. F. A. J. Brodziaak for the opportunity of seeing these cases. On account of his great experience of natives and native syphilis, his concurrence with most of the views expressed adds considerably to their value.

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CONGENITAL ANOMALIES OF THE NAILS. FOUR CASES OF HEREDITARY HYPERTROPHY OF THE NAIL-BED ASSOCIATED WITH A HISTORY OF ERUPTED TEETH AT BIRTH.

F. ANDERSON MURRAY, M.D.

As hereditary affections of the nails are not common, the following report may be of interest :

A child, aged 12 years, was brought to the school clinic suffering from scabies. During the examination I noticed the peculiar condition of the nails of both hands and feet. The mother, who accompanied the child, was similarly affected. On inquiry I learned that two other children and the grandfather suffered from the same affection of the nails. The nails are smooth and normal in appearance at the base, there being neither erosion nor striation present. At the free extremity, however, the nail is raised by a dark yellowish horny mass of material so as to project at an angle from the nail-bed. The angular projection of the nails is especially marked in the hands.

A further interesting feature of the cases is a history of each affected member of the family having been born with two or more erupted teeth. These erupted teeth, it is reported, decayed and disappeared about the sixth to the ninth month.

The children are otherwise normal. I have observed that they are all very sensitive in regard to the deformity. Even while sitting at their leisure they unconsciously conceal the finger-tips.

There is no history of syphilis, nor is there any history or sign of ichthyosis, psoriasis or any other form of keratosis.

Examination of the nail-filings and tissue from the nail-bed reveals no sign of ringworm spores.

There is no pain in or around the nails.

The mother states that the condition gives rise to much inconvenience, as the nails "get in the way" whilst sewing, etc. The finger-nails, she states, are often painful after a day's washing.

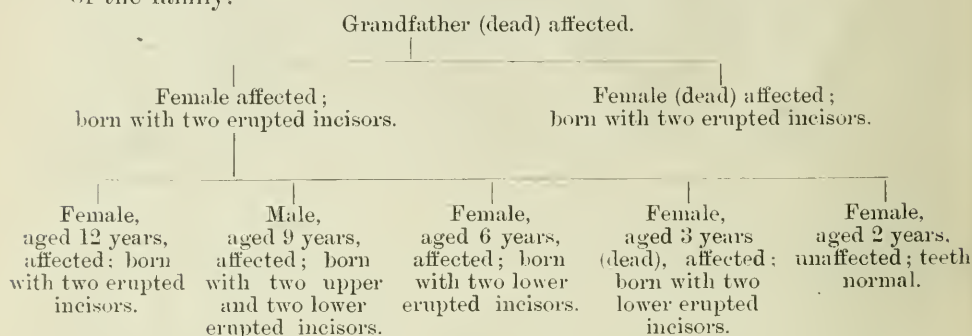
Owing to the projection from the nail-bed the nails are very liable to injury. The affected members of the family frequently suffer from paronychia. When a nail is lost the new nail at first appears normal, but as it grows up the horny material of the nail-bed gradually reappears, raising the anterior part of the nail until the nail again projects at an angle from its bed.

Family history.—The grandfather, who died recently, suffered from the condition, the nails of both hands and feet being affected. In his case I was unable to obtain a photograph.

He did not know whether his parents had suffered from the condition. He remembered being told that he had been "born with teeth."

He had ten children, of whom the third and fourth (girls) were affected. The third child is the mother of the children photographed. The fourth child died early in life.

I have not been able to trace the condition in any other members of the family.



The photographs show the condition well marked in the nails of the hands. The condition is not so well shown in the nails of the toes, as the anterior parts of the nails have been pressed down by the boots.

In the Journal of 1905, No. 17, Garrick Wilson reports three similar cases, except that in these cases there was no history of abnormality of the teeth. I have been unable to find any record of similar cases from the reports of the medical examination of school children.

Treatment.—This is far from satisfactory. In the case of the mother there has been some improvement by the filing down of the horny tissue and rubbing in of salicylic acid ointment. The improvement, however, is only temporary, for when the treatment ceases the horny mass rapidly grows again.

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1. Mother's hand. There is some improvement in the condition as a result of treatment.
2. Showing nails of hands and toes of female child aged 12 years.
3. Nails of hands and toes of boy aged 9 years.
4. Nails of hands and toes of girl aged 6 years.

ILLUSTRATING DR. F. ANDERSON MURRAY'S ARTICLE ON CONGENITAL ANOMALIES OF THE NAILS.

CURRENT LITERATURE.

FUNGOUS DISEASES.

RINGWORM OF THE NAILS: A PRELIMINARY REPORT OF SIXTEEN CASES OF ONYCHOMYCOSIS, WITH A CULTURAL STUDY OF TWELVE OF THESE CASES DUE TO TRICHOPHYTONS. ROBERT S. HODGES. (*Arch. of Derm. and Syph.*, 1921, iv p. 1.)

IN this contribution sixteen cases of onychomycosis are referred to. Cultures were obtained from twelve of the cases. Eleven of these were caused by large-spored ectothrix trichophytons, as indicated by finding that the nail disease was associated with skin-lesions in which the lanugo hairs were attacked by the fungus. The trichophytons proved to be the *Epidermophyton rubrum* of Castellani and the *Trichophyton gypsum*. In two of the cases a complete cure was effected by a persistent treatment with Whitfield's ointment, combined with scraping of the nails.

The paper is illustrated by excellent photographs of the cultures, and the growth of the fungi in hanging-drop preparations. J. M. H. M.

ACTINOMYCOSIS ATYPICA. KAREL HUBSCHMANN. (*Česká Dermatologie*, 1920, i, Nos. 8, 9, 10.)

THE patient was a school-girl, aged 14 years, with negative family and past history. Her trouble started during the wheat-threshing time. Her skin-lesion was undoubtedly secondary to the infection of a carious tooth. The possibility of a primary salivary-gland infection was excluded. The skin-lesion occupied a large part of the right cheek between the outer canthus and the lobe of the ear. Under potassium iodide internally. X-ray therapy and local applications of 10 per cent. solution of potassium iodide in the form of compresses, the patient improved remarkably.

After extensive cultural work and examination of many specimens, the author considers the case one caused by an atypical actinomycetes, some transitional form between actinomyces and streptothrix according to Petruschky's classification.

The patient was given an intradermic injection on antigen prepared from a two months old gluco-maltose bouillon culture. A marked local reaction took place. There was no rise in temperature. The second day after the injection the actinomycotic area became red, swollen and very tender. There was an increase in the discharge of pus, rich in granules. The focal reaction subsided in fourteen days. SPINKA (St. Louis).

BLASTOMYCOSIS. VLADISLOV SVESTKA. (*Česká Dermatologie*, 1920, i, No. 6.)

CONSIDERING the fact that the existence of blastomycosis in Bohemia was not generally recognised by the profession at large, the article calls attention to the four cases treated at the Dermatological Clinic in Prague within a year. The lesions were situated on the exposed parts of the body, the face and the distal parts of the extremities. SPINKA (St. Louis).

FOUR CASES OF LICHENOID TRICHOPHYTIDE. CHARLES MALLORY WILLIAMS. (*Arch. of Derm. and Syph.*, 1921, iv, p. 353.)

CASE 1 was that of a severe kerion, which was accompanied by fever and a diffuse exanthem, consisting of groups of bright red papules, and associated with congestion of the conjunctiva.

CASE 2 showed kerion of the occiput and a follicular trichophytide at the side of the neck.

CASE 3 had kerion associated with an eruption of small soft follicular papules on the neck and urticarial lesions on the forearm.

In CASE 4 a large kerion was accompanied by vesico-pustules on the scalp, forehead and neck, and lichenoid papules on the rest of the body.

Cultures were made from all the cases, but a growth was only obtained from CASE 4, in which the organism resembled *Trichophyton faviforme*.

J. M. H. M.

NEW GROWTHS.

SYNOVIAL LESIONS OF THE SKIN. GEORGE M. MACKEE and GEORGE C. ANDREWS. (*Arch. of Derm. and Syph.*, 1921, iv, p. 162.)

THESE consist of small globular projections about the size of a pea, which generally occur over the dorsal aspect of the finger-joint. When punctured, a syrupy, whitish, yellowish or brownish fluid exudes; occasionally the surface may be verrucose. They differ from ganglions in that they do not show any definite connection with the joint-cavities, and they occur on the extensor aspects. Illustrations of two such cases, with Röntgenograms, are appended. The pathogenesis is doubtful, and they have been variously regarded as (1) hernia of the synovial membrane of a joint or tendon-sheath through its capsule, (2) as folds or crypts of the synovial membrane lining joints, or (3) adventitious bursae. Of the various treatments employed, complete excision and X-rays have given the best results.

J. M. H. M.

RECKLINGHAUSEN'S DISEASE: ITS RELATION TO THE ENDOCRINE SYSTEM; REPORT OF AN ILLUSTRATIVE CASE. OSCAR L. LEVIN. (*Arch. of Derm. and Syph.*, 1921, iv, p. 303.)

IN this contribution a case of Recklinghausen's disease in a woman, aged 20 years, is reported, in which there were evidences of imperfect endocrine functioning. Suprarenal disorder was suggested by cutaneous pigmentation, painful new growths and physical and mental weakness; pituitary activity by anatomical peculiarities, such as asymmetry of the face and head, prognathism, enlarged right ear, spacing and character of the teeth, and hyper-extensibility of the fingers; disorders of the gonads by abnormal hair growth, and obesity; and thyroid deficiency by a poor vasomotor tone, hyperaesthesia, and a thinning of the outer third of the eyebrows.

The writer concludes that Recklinghausen's disease is a complex of cutaneous and general symptoms, depending essentially for its aetiology on "endocrine dysfunction"; that the great majority of cases would show definite signs of endocrine vegetative disorders if they were carefully examined for these findings; that all cases of Recklinghausen's disease tend finally to develop such symptoms, unless there is some compensatory halting of the glandular dystrophy, and that

eventually death, unless from intercurrent diseases, will in all probability result from progressive asthenia; that the term "neurofibromatosis" should not be used synonymously with Recklinghausen's disease, as neurofibroma or fibroma constitutes only one type of the cutaneous lesions, and pigmentation, which is a frequent skin-lesion, may be present without any signs of fibromatosis.

J. M. H. M.

PSEUDOXANTHOMA ELASTICUM. BINFORD THRONE and HERMAN GOODMAN. (*Arch. of Derm. and Syph.*, 1921, iv, p. 419.)

In this paper a case of Pseudoxanthoma elasticum is described in a woman, aged 39 years who had had the affection since she was four years old. The lesions consisted of butter-yellow papules, which tended to become confluent, and small plaques which were either raised or flat. Isolated lesions were present, chiefly on the anterior surface of the neck, raised plaques occurred on the posterior aspects of the neck, and both types of lesion were present in the axillæ. The histological findings were characteristic of the affection. In the lower and middle part of the derma were clumps of swollen and elastic fibres, and collagen fibres which had undergone a basic degeneration. The sweat and sebaceous glands and hair-follicles were not involved, and no giant-cells nor xanthoma cells were present.

In addition to the description of the case there is a review of the literature and a list of the reported cases in chronological order.

J. M. H. M.

CONGENITAL CONDITIONS.

A RARE CASE OF ALBINISM. V. SYESTKA. (*Ceská Dermatologie*, 1920, i, No. 7.)

The patient, aged 12 years, with blue eyes, showed a head covered with thin, ashy blonde, very soft and curly hair. The curls presented crinkling like that seen in the hair of coloured people. The hair resisted all attempts at straightening. It was elliptical on cross section. The possibility of admixture of negro blood in the ancestry was excluded. It is a question whether the case should be considered as one of albinism-negro variety or a case of atavism.

SPINKA (St. Louis).

HYPOTRICHOSIS UNIVERSALIS CONGENITA. BAZANT and GAWALOWSKI. (*Ceská Dermatologie*, 1920, i, No. 7.)

The patient, a farmer, aged 26 years, showed an absolute lack of hair all over his body. The patient's family history shows he inherited his anomaly from the mother's side. The patient's mother has no hair, eyelashes or brows. Her father had a universal alopecia. Two of her brothers were bald, 1 normal. The families of the mother's brothers show: First, normal, has 6 children, all normal. Second, bald; 5 children—4 normal, 1 bald girl. Third, bald; 4 children—3 normal, 1 bald boy. Their grandchildren are all normal.

The patient has 3 normal brothers, 2 bald brothers and 2 bald sisters. The patient complained of hyperhidrosis over his entire body except on the chest. Physical examination was negative; genitalia and sexual function were normal; no enlargement of thyroid.

SPINKA (St. Louis).

PATHOLOGY.

ŒDEMA IN MAN. F. SAMBERGER. (*Česká Dermatologie*, 1920, i, No. 1.)

THE pathogenesis of œdema is as yet an unsolved problem. From dermatological experience we know two types of œdema. They differ both clinically and pathologically, and have also a different pathogenesis. They are—(1) *lymphatic œdema*, which results from abnormal accumulation of lymph and tissue fluids in a certain locality, either (a) by hyperproduction of lymph, or (b) by retention of lymph. The lymph is secreted by the endothelium of blood-capillaries. It is an active process controlled by special nerves and responding to direct and reflex stimuli. The production of lymph can be, therefore, actively increased. Resulting œdema comes on suddenly and disappears suddenly with the removal of the cause. Under this classification of œdema belong—acute œdema of Quincke, the urticarial wheal, and the bulla of pemphigus. Just how the lymph returns from the tissues is not definitely settled. The author believes that under normal conditions the lymph returns from the tissues only by means of its own channels (as illustrated by the fact that total extirpation of inguinal lymph-glands is followed by elephantiasis of the corresponding area). Therefore, whatever will block the lymph-channels will prevent the outflow of lymph from the part. Resulting swelling is a passive lymph œdema. It comes on gradually and remains stationary if the interference with outflow is permanent. The œdema is solid, the skin of the affected area is yellowish but not anemic.

(2) *Serous œdema* is best known in connection with nephritis and uncompensated heart diseases. The skin never hypertrophies even if œdema should last for months. The fluid of serous œdema must be different in its composition and genesis from that of lymph with its nutritive qualities. The study of genesis of œdema in these cases is difficult on account of the complicated nature of their pathological processes. The author had a chance to study a simple case of serous symmetrical œdema of the face in a young soldier. The patient was exposed to bitter cold in the field. His face was frost-bitten. In twenty-four hours the entire face became considerably swollen. He improved slightly in the hospital. In summer œdema became barely noticeable, but returned in winter. Physical examination of the soldier was entirely negative otherwise. It was a case of so-called "white œdema," known among soldiers since the time of Charles VI, and of simple pathogenesis. Cold affects the vitality of blood-capillaries in the skin. They no more carry blood as normally. The serum, and in the most severe cases also the formed elements, passes through damaged capillary walls and saturates the tissues. The normal production of tissue-fluids, however, stops, and the cells soon show under-nourishment. The skin becomes thin, transparent, pale and cold. The case illustrates the fact that serous œdema is caused by weakened activity of diseased blood-capillaries.

The author further calls attention to the "purplish-red œdema" occurring in anæmic persons in cold weather and limited to fingers and hands. It is a case of passive congestion and œdema, cold affecting only the venous element of capillaries (acrosphyxia) while the arterial side is functioning properly.

Inflammatory œdema is a serous œdema, and accompanies all cases of inflammation. In some cases œdema takes place in surrounding tissues without other pathology. If the offending organism is very virulent, capillaries of a wide area

become paralysed and an extensive œdema takes place. The weaker the host, the lesser the vitality of the capillaries, the easier it is for such œdema to develop.

Malignant œdema, comparatively common in war times, is an extreme example of it. SPINKA (St. Louis).

STUDIES CONCERNING THE INFLUENCE OF ARSENICAL PREPARATIONS ON CUTANEOUS TESTS. ALBERT STRICKLER.

(*Arch. of Derm. and Syph.*, 1921, iv, p. 177.)

As a result of the studies the writer concludes that :

(1) The repetition of a luetin test in non-syphilitic patients is capable of producing positive luetin tests in about 21 per cent. of our subjects.

(2) The intravenous administration of arsphenamin apparently stimulates the production of a luetin test in non-syphilitic patients, and in his series he was able to produce 53 per cent. positive luetin tests following this form of intravenous specific therapy.

(3) In his experience the intravenous administration of cacodylate of soda acts in the same manner as arsphenamin, only more feebly.

(4) The repetition of the tuberculin (von Pirquet) test may produce a positive finding, but very infrequently, occurring only once in a series of fourteen subjects.

(5) The intravenous administration of arsphenamin is capable of producing a positive tuberculin (von Pirquet) test previously negative. This occurred in three instances of ten patients.

(6) The anaphylactic food tests made by either the endermic or scratch method does not seem to be influenced by the intravenous administration of either arsphenamin or cacodylate of soda, but his investigation of this phase of the problem was not yet complete. J. M. H. M.

TREATMENT.

USE OF RESORCIN IN SYCOSIS TRICHOPHYTICA. V. SVESTKA.

(*Česká Dermatologie*, 1920, i, No. 1.)

A 1-2 per cent. aqueous solution of resorcin has been used with success in the treatment of sycosis at the Dermatological Clinic of Prague. The patient is instructed to pour off a part of the solution in a dish, heat it, and dab it on the diseased area by means of a cotton pledget as hot as he can stand it for five minutes three times daily. Dry the skin gently. No bandaging is allowed, and the patient is not to shave. Epilation is recommended.

Resorcin acts as an antiparasitic astringent and a keratoplastic. Heat aids the healing tendency. SPINKA (St. Louis).

IDIOSYNCRASY TOWARD RÖNTGEN RAYS. K. GAWALOWSKI.

(*Česká Dermatologie*, 1920, i, No. 1A.)

INJURIOUS effects of X-rays manifest themselves most frequently as acute or chronic dermatitis, less often as alopecia, oligospermia or azoospermia. The author reviews the three usually accepted degrees of Röntgen dermatitis, (*a*) erythematosa, (*b*) bullosa, (*c*) ulcerosa or gangrenosa, and adds the histological findings. There are variations from normal response to rays and cases of increased and decreased sensitiveness. By idiosyncrasy is meant a reaction of

abnormal character or intensity to a given dose. The tendency to blame uncritically all untoward results of X-ray therapy on idiosyncrasy soon met with opposition, and many authors went to the other extreme and denied the possibility of idiosyncrasy, explaining poor results by errors in dosage and imperfection of the methods used. The author cites five cases which tend to prove the existence of idiosyncrasy, and also recalls Bergonnié-Tribondeau's experimental work on mice. The meaning of so-called "early reaction" and "artificial reaction" are as yet unsettled. Most authors do not consider "an early reaction" as a manifestation of idiosyncrasy. They believe that it depends largely on the irritability of blood-vessels (frequent in Morbus Basedowi).

Atypical reactions manifest themselves in two ways: (a) As an erythema or a papular exanthem on unexposed surfaces, and often accompanied by a rise of temperature; or (b) as eczematous dermatitis in the vicinity of the treated area. The latter is considered neuropathic in origin or due to the toxic effect of broken-down cells.

Sensitiveness to X-rays is increased physiologically during menstruation and pregnancy. Certain pathological states are accompanied by increased sensitiveness: Diabetes, arteriosclerosis, gout, cachectic states and certain injuries. It is therefore advisable to take them into consideration when deciding on dosage. Clinical and experimental work shows that an acutely hyperemic skin is very sensitive (acute lesions of psoriasis). Search through the literature shows few cases of decreased sensitiveness. German clinics report several instances of absolute overdose without even an erythema. From the legal standpoint it is advisable to follow rather closely one of the well-recognised dosage systems which afford the best protection against possible untoward consequences of exposures.

SPINKA (St. Louis).

ICHTHYOL IN THE TREATMENT OF ERYSIPELAS. EISLER. (*Česká Dermatologie*, 1920, i, No. 6.)

FOR the last six months pure ichthyol has been used exclusively in the treatment of erysipelas on Prof. Samberger's service. There were ninety-six cases. Pure ichthyol is spread over the affected area and about 2-5 cm. beyond it. The entire surface is dotted with small bits of cotton. In hardening, ichthyol incorporates the cotton and makes a protective dressing adhering well to the skin. No bandaging is necessary. One application is sufficient. In most cases there is no tendency to peripheral extension. The temperature drops, symptoms disappear, and erysipelas clears up in five days. Internally grm. 0.4 of quinine muriate are given daily.

Samberger believes that the good local effect of ichthyol depends on its antibacterial and capillary tonic property.

SPINKA (St. Louis).

RADIUM TECHNIQUE IN THE TREATMENT OF MALIGNANT DISEASES OF THE SKIN. DOUGLAS QUICK. (*Arch. of Derm. and Syph.*, 1921, iv, p. 322.)

IN this paper the writer describes the radium technique employed at the Memorial Hospital in New York. He lays special emphasis on the importance of accuracy of approximation of the apparatus to the lesion in the treatment. At this hospital radium emanations are used exclusively. The emanation may be in an unfiltered or bare tube, which permits the utilisation of practically all

the beta and gamma rays; in a tube of 0.2 mm. aluminium, which removes only the soft beta rays and a few of the gamma rays; in a 0.5 mm. silver tube, which removes nearly all the beta rays and a percentage of the softer gamma rays; and a millimetre of platinum tube, which removes all the beta rays and most of the softer gamma rays. In addition, unfiltered radiation is also obtained from exposing a thin piece of lead foil to the emanation under pressure for a sufficient time to obtain an active deposit of radium on the lead. A useful method of applying the radium accurately to the skin is by embedding the tubes in plastic dental modelling compound, and allowing the compound to harden in position. Where surface radiation applications are inadequate, the burying of small glass capillary tubes of radium emanation in the tissue has proved of inestimable value.

This paper is illustrated by a series of excellent photographs, showing cases under treatment and the suitable type of apparatus. J. M. H. M.

GENERAL.

OBSERVATIONS ON MEDICAL PHOTOGRAPHY, WITH SPECIAL REFERENCE TO SKIN DISEASES. HOWARD FOX. (*Arch. of Derm. and Syph.*, 1921, iv, p. 27.)

THIS paper will be of the greatest interest to all those who have attempted to take photographs of skin-diseases. Of the various sources of light, diffused daylight has proved to be the most satisfactory, but it has the disadvantage of requiring a well-lighted studio, and recourse has generally to be made to gas-light. The proper arrangement and position of the patient are next considered, and such other matters as the length of exposure, the choice of a camera, etc. The writer corroborates the general experience that satisfactory medical photographs cannot be made by the average professional photographer, and that it is usually necessary for the medical man to learn at least to pose the patient and to make the exposure. J. M. H. M.

SYPHILIS.

THE SACHS-GEORGI REACTION IN THE SPINAL FLUID OF PATIENTS WITH SYPHILIS. WARD W. HARRYMAN. (*Arch. of Derm. and Syph.*, 1921, iv, p. 299.)

ACCORDING to the writer, the results of the Sachs-Georgi reaction on the spinal fluid closely parallel those of the Wassermann test; the reaction is a substitute or may be a valuable addition to the Wassermann test on the spinal fluid, and it furnishes a means for an earlier diagnosis of central nervous system syphilis than the Wassermann test. J. M. H. M.

QUARTERLY SURVEY OF DERMATOLOGICAL LITERATURE.

ERYTHEMAS, INFLAMMATIONS, ETC.

- Actinomycosis**, Twenty-five Cases of, with Especial Reference to Vaccine Therapy. LEONARD COLEBROOK. (*Lancet*, April 30th, 1921, p. 893.)
- Black Tongue**. H. ROGER. (*Gaz. des Hôp.*, October 13th, 1921, Ann. xciv, No. 80, p. 1269.)
- Calcification of the Skin in a Child**. J. L. MORSE. (*Amer. Journ. Child. Dis.*, October, 1921, xxii, No. 4, p. 412.)
- Dermatitis Venenata**, Toxin Treatment of. A. STRICKLER. (*Journ. Amer. Med. Assoc.*, September 17th, 1921, lxxvii, No. 12, p. 910.)
- Eczema in Breast-Fed Baby**. E. S. O'KEEFE. (*Boston Med. and Surg. Journ.*, August 18th, 1921, clxxxv, No. 7, p. 194.)
- Erythema Nodosum**, Its Nature and Significance. H. ERNBERG. (*Jahrb. für Kinderheilk.*, Bd. xcv, Heft 1-2, 1921.)
- Erythema Nodosum and Tuberculosis**. H. J. VETLESEN. (*Norsk. Mag. f. Lægev.*, October, 1921, p. 689.)
- Granuloma Inguinale**, Treatment of. K. M. LYNCH. (*Journ. Amer. Med. Assoc.*, September 17th, 1921, lxxvii, No. 12, p. 925.)
- Herpes Zoster and Chickenpox**. W. M. KRAUS. (*New York Med. Journ.*, August 3rd, 1921, cxiv, No. 3, p. 162.)
- Index**, Classified Decimally, of Dermatology. N. TOOMEY. (*Urol. and Cut. Rev.*, July, 1921, xxv, No. 7, p. 395.)
- Leprosy in Minor Art**. A. MARTIN. (*Urol. and Cut. Rev.*, August, 1921, xxv, No. 8, p. 445.)
- Lupus Pernio in a Child**, A Condition Suggesting. F. PARKES WEBER. (*Lancet*, May 14th, 1921, p. 1021.)
- Lupus Vulgaris**, Effects of Secondary Infections. (Illustrated.) L. BROcq. (*Urol. and Cut. Rev.*, September, 1921, xxv, No. 9, p. 507.)
- Occupational Dermatitis in Dentists**. (Annotation.) (*Lancet*, 1921, i, p. 721.)
- Onychia due to B. coli communis**. L. HOLLANDER. (*Arch. of Derm. and Syph.*, September, 1921, iv, No. 3, p. 366.)
- Otitis Externa**, Flavine Treatment of. J. C. SCAL. (*Journ. Amer. Med. Assoc.*, October 1st, 1921, lxxvii, No. 14, p. 1102.)
- Pellagra**, Treatment of. J. W. MCCREADY. (*Med. Record*, September 3rd, 1921, c. No. 19, p. 417.)
- Photography**, Medical, Observations on. H. FOX. (*Arch. of Derm. and Syph.*, July, 1921, iv, No. 1, p. 27.)
- Psilosis** (Sprue), Study of. D. BOVIAD. (*Journ. Amer. Med. Assoc.*, September 3rd, 1921, lxxvii, No. 10, p. 753.)
- Psychogenic Factors in Skin-Diseases**. M. SCHOLTZ. (*Med. Record*, August 6th, 1921, c. No. 6, p. 234.)
- Purpura**, Clinical Significance of. H. APPEL. (*Arch. of Ped.*, September, 1921, xxxviii, No. 9, p. 603.)
- Purpura Granularis**, Case of. K. EDEL. (*Urol. and Cut. Rev.*, August, 1921, xxv, No. 8, p. 460.)

- Purpura Idiopathica.** E. J. BRADLEY. (*Practitioner*, September, 1921, cvii, No. 3, p. 214.)
- Pyrethrum Dermatitis.** C. P. McCORD, C. H. KALKER and D. K. MINSTER. (*Journ. Amer. Med. Assoc.*, August 6th, 1921, lxxvii, No. 6, p. 448.)
- Research Problems in Dermatology.** J. F. SCHAMBERG. (*Arch. of Derm. and Syph.*, September, 1921, iv, No. 3, p. 293.)
- Rhus, Internal Poisoning from.** J. B. McNAIR. (*Arch. of Derm. and Syph.*, July 1921, iv, No. 1, p. 62.)
- Streptococcic Dermatoses.** E. D. CHIPMAN. (*Arch. of Derm. and Syph.*, October, 1921, iv, No. 4, p. 534.)
- Urticaria.** G. L. LAMBRIGHT. (*Amer. Journ. Med. Sci.*, August, 1921, clxii, No. 2, p. 183.)
- Vaccinia or Cow Pox, Outbreak in Animals and Men, 1909.** R. T. REECE. (*Proc. Roy. Soc. Med.*, November, 1921, xv, No. 1, p. 13.)

FUNGOUS AND PARASITIC DISEASES.

- Blastomycosis, Two Cases.** W. B. HOWES. (*Boston Med. and Surg. Journ.*, September 15th, 1921, clxxxv, No. 11, p. 315.)
- Cutaneous Sporotrichosis.** R. E. HOYT. (*United States Naval Med. Bull.*, October, 1921, xv, No. 4, p. 809.)
- Epidermophytes of Body and Hands.** R. SABOURAUD. (*Urol. and Cut. Rev.*, August, 1921, xxv, No. 8, p. 443.)
- Lichenoid Trychophytide, Four Cases.** C. M. WILLIAMS. (*Arch. of Derm. and Syph.*, September, 1921, iv, No. 3, p. 353.)
- Mycotic Infections among Arriving Aliens.** T. B. H. ANDERSON. (*The Military Surgeon*, July, 1921, xlix, No. 1, p. 53.)
- Nails, Ringworm of.** R. S. HODGES. (*Arch. of Derm. and Syph.*, July, 1921, iv, No. 1, p. 1.)
- Ringworm, A New Variety of.** ROBERT CRAIK. (*Lancet*, May 14th, 1921, p. 1021.)
- Ringworm Culture Mediums, Comparison of.** F. D. WEIDMAN and T. M. McMILLAN. (*Arch. of Derm. and Syph.*, October, 1921, iv, No. 4, p. 451.)
- Sarcoptic Scabies in a Chimpanzee.** (Illustrated case.) A. W. N. PILLERS. (*Vet. Journ.*, September, 1921, No. 555, p. 329.)

RADIO-THERAPY.

- Inveterate Multiple Epitheliomata of Face treated by Radium.** (Illustrated.) D. MONTGOMERY and G. D. CULVER. (*Med. Record*, October 8th, 1921, c, No. 15, p. 625.)
- Progress in Radium and Roentgen Treatment.** R. H. BIGGS. (*Internat. Journ. of Surg.*, September, 1921, xxxiv, No. 9, p. 308.)
- Similarity of Effects produced by Absence of Vitamins and by Exposure to X-Rays and Radium.** W. CRAMER, A. H. DREW and J. C. MOTTRAM. (*Lancet*, May 7th, 1921, p. 963.)
- Technic in Radium Treatment of Malignant Diseases of the Skin.** D. QUICK. (*Arch. of Derm. and Syph.*, September, 1921, iv, p. 322.)
- X-Ray Dosage in Skin-Diseases.** H. GOODMAN. (*Urol. and Cut. Rev.*, July, 1921, xxv, No. 7, p. 391.)

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- Angio-Neurotic Œdema**, Ætiology of. F. M. TURNBULL. (*Journ. Amer. Med. Assoc.*, September 10th, 1921, lxxvii, No. 11, p. 858.)
- Eczema**, Protein Sensitisation in. M. A. RAMIREZ. (*New York Med. Journ.*, September 21st, 1921, cxiv, No. 6, p. 317.)
- Endotheliomata**, A Contribution to the Study of the. E. H. KETTLE and JOAN M. ROSS. (*Lancet*, May 14th, 1921, p. 1012.)
- Gland Puncture in Diagnosis**. G. C. GUTHRIE. (*Bull. Johns Hopkins Hosp.*, August, 1921, xxxii, No. 366, p. 266.)
- Paraffin-Oil Tumour**, Probable Case of. J. H. STOKES and A. J. SCHOLL. (*Arch. of Derm. and Syph.*, July, 1921, iv, No. 1, p. 50.)
- Porokeratosis**, Case of. C. S. WRIGHT. (*Arch. of Derm. and Syph.*, October, 1921, iv, No. 4, p. 469.)
- Pseudoxanthoma Elasticum**. B. THORNE and H. GOODMAN. (*Arch. of Derm. and Syph.*, September, 1921, iv, No. 4, p. 419.)
- Sarcoid of Boeck-Darier-Roussy**, Study of a Case. C. W. FINNERUD. (*Arch. of Derm. and Syph.*, September, 1921, iv, No. 3, p. 342.)
- Sarcoid on Syphilitic Basis**. AAGE L. FÖUSS. (*Dansk. Derm. Selsk. Forhand.*, 1921, p. 66.)
- Sweat Patterns of Man**. N. TOOMEY. (*Urol. and Cut. Rev.*, September, 1921, xxv, No. 9, p. 517.)

TREATMENT.

- Burns**, Paraffin Treatment of. H. COHEN. (*New York Med. Journ.*, August 17th, 1921, cxiv, No. 4, p. 247.)
- Chaulmoogra Oil in Leprosy and Tuberculosis**, The Successful Treatment of Leprosy by Injections of Soluble Preparations of the Fatty Acids of Chaulmoogra and Other Oils and its Bearing on the Tuberculosis Problem. Sir LEONARD ROGERS. (*Lancet*, June 4th, 1921, p. 1178.)
- Cygnolin in Treatment of Psoriasis**. E. AHLSTWEDE. (*Urol. and Cut. Rev.*, September, 1921, xxv, No. 9, p. 521.)
- Diathermy in Dermatology**. W. K. SIBLEY. (*Urol. and Cut. Rev.*, September, 1921, xxv, No. 9, p. 513.)
- Eczema**, Dietetic Treatment of. J. P. C. GRIFFITH. (*New York Med. Journ.*, August 3rd, 1921, cxiv, No. 3, p. 153.)
- Elephantiasis of Legs Treated by Operation**. M. WALTHER. (*Bull. de la Soc. de Chirurgie*, July 12th, 1921, xlvii, No. 24, p. 1010.)
- Experiments with Paraffin Preparations in Skin-Therapy** ("Ambrine," "Parasan"). A. KISSMEYER. (*Ugeskr. f. Læger.*, 1921, No. 14.)
- Hæmangioma of Thorax Cured by Aspiration**. D. S. ADAMS. (*Boston Med. and Surg. Journ.*, August 25th, 1921, clxxxv, No. 8, p. 219.)
- Larva Migrans**, Note on Treatment. L. W. KETRON. (*Arch. of Derm. and Syph.*, September, 1921, iv, No. 3, p. 368.)
- Perforating Ulcer of Foot**, Amputation of Thigh. D. C. STRAUS. (*Surg. Clin. of N. America*, August, 1921, i, No. 4, p. 1113.)
- Plastic and Cosmetic Surgery of Head and Neck**. H. L. HUNT and G. TRECK. (*Amer. Journ. Surg.*, July, 1921, xxxv, No. 7, p. 211, and No. 8, p. 234.)
- Varicose Ulcers**, Circular Incisions for Treatment. M. DE NABIAS. (*Bull. de la Soc. de Chirurgie*, July 19th, 1921, xlvii, No. 25, p. 1047.)

SYPHILIS AND ULCUS MOLLE.

DIAGNOSIS, ETC.

- Accessory Molar Cusp in Hereditary Syphilis.** L. M. PAUTRIER. (*Ann. des Mal. Vén.*, September, 1921, Ann. vi, No. 9, p. 550.)
- Duodenal Ulcer, Case of Luetic.** HAROLD SPENCE. (*Lancet*, April 30th, 1921, p. 908.)
- Extra-Genital Chancres, Four Cases.** G. W. BOWMAN. (*Urol. and Cut. Rev.*, September, 1921, xxv, No. 9, p. 526.)
- Hereditary Syphilis, Incidence of.** P. C. JEANS and J. V. COOKE. (*Amer. Journ. Dis. of Child.*, October, 1921, xxii, No. 4, p. 402.)
- Heredo-Syphilis, Clinical Diagnosis.** H. F. STOLL. (*Journ. Amer. Med. Assoc.*, September 17th, 1921, lxxvii, No. 12, p. 919.)
- Lung, Syphilis of.** U. J. WILE, C. H. MARSHALL and A. ARBOR. (*Arch. of Derm. and Syph.*, July, 1921, iv, No. 1, p. 37.)
- Soft Sore of the Tongue, Case of.** DUJARDIN and DUCRÉ. (*Ann. des Mal. Vén.*, August, 1921, Ann. vi, No. 8, p. 502.)
- Stomach, Syphilis of, Case with Operation Findings. (Illustrated.)** L. C. GATEWOOD. (*Surg. Clin. of N. America*, August, 1921, i, No. 4, p. 1175.)
- Whites and Negroes, Comparative Study of Syphilis in.** E. L. ZIMMERMAN. (*Arch. of Derm. and Syph.*, July, 1921, iv, No. 1, p. 75.)

PATHOLOGY.

- Complement-Fixation in Wassermann Test, Optimum Conditions.** R. L. KAHN. (*Arch. of Derm. and Syph.*, September, 1921, iv, No. 3, p. 358.)
- Delayed Negative Wassermann, Significance of.** R. R. MILLON. (*Arch. of Derm. and Syph.*, September, 1921, iv, No. 3, p. 363.)
- Hypertoxicity of Novarsenobenzol.** MOURADIAN. (*Ann. des Mal. Vén.*, August, 1921, Ann. vi, No. 8, p. 494.)
- Ice-Box Modification of Wassermann Test.** A. KEIDEL and J. E. MOORE. (*Bull. of Johns Hopkins Hosp.*, September, 1921, xxxii, No. 367, p. 296.)
- Iodine Phosphoric Acid Reaction in Urine in Syphilis.** R. A. KILDUFFE. (*Med. Record*, August 20th, 1921, c, No. 8, p. 329.)
- Neuro-Syphilis, Genesis of.** J. E. MOORE. (*Arch. of Derm. and Syph.*, July, 1921, iv, No. 1, p. 55.)
- Positive Wassermann—Active Syphilis.** TH. E. HESS THAYSEN. (*Ugeskr. f. Læger.*, 1921, No. 23.)
- Refractometric Studies in Human Syphilis.** K. TOKUDA. (*Arch. of Derm. and Syph.*, October, 1921, iv, No. 4, p. 512.)
- Sachs-Georgi Reaction in Spinal Fluid of Patients with Syphilis.** W. W. HARRYMAN and A. ARBOR. (*Arch. of Derm. and Syph.*, September, 1921, iv, No. 3, p. 299.)
- Sachs-Georgi Test.** F. PARKER and A. V. R. HAIG. (*Arch. of Derm. and Syph.*, July, 1921, iv, No. 1, p. 67.)
- Serum-Reaction, Simple Quantitative, for the Diagnosis of Syphilis and the Expression of Results in Standard Units.** GEORGES DREYER and HUGH KINGSLEY WARD. (*Lancet*, May 7th, 1921, p. 956.)

- Spirochæticidal Properties of Serums.** F. EBERSON. (*Arch. of Derm. and Syph.*, October, 1921, iv, No. 4, p. 490.)
- Staining of *S. pallida* by Fontana-Tribondeau Method.** C. FUENTES. (*Arch. of Derm. and Syph.*, October, 1920, iv, No. 4, p. 448.)
- The Newborn: Pathology of Syphilis in Twenty-one Cases.** F. J. BROWNE. (*Journ. Obst. and Gyn. of Brit. Empire*, Summer No., 1921, xxviii, No. 2, p. 153.)

TREATMENT.

- Ante-Natal Syphilitic Environment, Treatment of.** J. H. SEQUEIRA. (*New York Med. Journ.*, October 5th, 1921, cxiv, No. 7, p. 415.)
- Arsenic, The Elimination of.** A. J. DEBON. (*Gaz. des Hôp.*, October 6th, 1921, Ann. xciv, No. 78, p. 1237.)
- Clinic for Syphilitic Children, Report on the First Year's Work.** REGINALD C. JEWESBURY. (*Lancet*, May 7th, 1921, p. 962.)
- Intra-Spinal Therapy in Neuro-Syphilis.** E. N. BONDREAU. (*Med. Record*, September 24th, 1921, c, No. 13, p. 535.)
- Jaundice from Late Salvarsan Poisoning, A Case of.** JOHN ELLIOTT. (*Lancet*, June 4th, 1921, p. 1180.)
- Legislative Control of Ante-Natal Syphilis, Effect of.** J. H. L. CUMPTON. (*Med. Journ. of Australia*, August 20th, 1921, ii, No. 8, p. 133.)
- Prevention of Venereal Infection.** T. E. SATTERTHWAITE. (*Med. Record*, August 20th, 1921, c, No. 8, p. 311.)
- Salvarsan Icterus, The Question of.** F. LINDSTEDT. (*Sc. Läkarsällskapets Handlingar*, 1921, Häft 2.)
- Series of Ill-Effects from Novarsenobenzol.** E. VANHOECKE. (*Ann. des Mal. Vén.*, July, 1921, Ann. vi, No. 7, p. 441.)
- Soft Sore and Bubo, The Treatment of.** R. BARTHELEMY. (*Ann. des Mal. Vén.*, July, 1921, Ann. vi, No. 7, p. 446.)
- The Treatment of Cases of Syphilis having a Persistent Positive Wassermann Reaction.** C. F. MARSHALL. (*Lancet*, June 18th, 1921, p. 1299.)
- Two Crises due to Novarsenobenzol.** E. GREENBERG. (*Ann. des Mal. Vén.*, August, 1921, Ann. vi, No. 8, p. 495.)

REVIEW.

THE WASSERMANN TEST.*

THIS book, which has been enlarged and revised in the present edition, is intended both for the laboratory worker and the practitioner of medicine. Hence the method of performing the test as well as the significance of the results are fully discussed. The method, which is described in detail, is a modification of the original one-tube procedure of Wassermann and his co-workers, involving

* *The Wassermann Test.* By CHARLES F. CRAIG. Second edition. London: H. KIMPTON, 1921. Price 25s. nett.

the use of a fixed number of doses of complement and, as test corpuscles, human red cells sensitised with the corresponding antibody. The use of this hæmolytic system obviates certain difficulties which may arise when the serum to be tested contains normal antibody for foreign corpuscles, *e.g.* sheep's, but other means are available for attaining the same end. In using human corpuscles, also, stress is laid upon ascertaining the blood-group to which they belong. As antigen alcoholic extract of fetal syphilitic liver or of human heart fortified with cholesterol is employed, but Craig prefers to use both for each serum. In the original preface the author comments upon the importance of entrusting the performance of such tests to well-qualified serologists; it is hardly possible to over-emphasise this point.

From the clinical side the book is especially valuable as incorporating the war experience of the American Army laboratories. An important observation made by the author along with Nichols is that in a syphilitic a positive Wassermann reaction may be temporarily rendered negative during 24-36 hours after an alcoholic potation. The various tests of the cerebro-spinal fluid which have now come to be recognised as of such great importance in the diagnosis of nervous disease are detailed. But it is reserved no doubt for the next edition to deal with the precipitation reactions in syphilis, which, in the form of the relatively simple Sachs-Georgi test, promise to yield results practically corresponding to those of the Wassermann reaction.

This book is a full, practical guide to the methods of the Wassermann test as carried out in the army and public health services of America; at the same time it is valuable as a store-house of correlated clinical and serological data. Such correlated experience is essential for all who would use the results of the reaction intelligently.

C. H. B.

BOOKS RECEIVED.

Radiations from Slow Radium and Their Therapeutic Value. By J. B. KRAMER, with a Note on Their Therapeutic Value by J. HALL-EDWARDS, L.R.C.P.E., D.M.R.&E., F.R.S.Edin. 1921. Demy 8vo. Pp. vi + 105. Figures 63. London: Baillière, Tindall & Cox. Price 12s. 6d. net.

Dermatologische Vorträge, Heft 7: Ambulante Behandlung der Unterschenkelgeschwüre. By S. JESSNER. 5th Edition. 1921. Leipzig: Curt Kabitzsch. Price M. 16.

A Treatise on Diseases of the Skin, for Advanced Students and Practitioners. By H. W. STELWAGON, M.D., Ph.D., with the assistance of H. K. GASKILL, M.D. 9th Edition. 1921. Pp. 1313. 29 coloured and half-tone plates, and 401 illustrations in text. Philadelphia and London: W. B. Saunders Co., Ltd. Price 50s. net.

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